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THE USE AND ABUSE OF WEIGHT-HEIGHT-AGE TABLES AS INDEXES OF HEALTH AND NUTRITION *

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In the hands of novices and the uncritical observer, all instruments of accuracy or precision may be grossly abused. Weight-height-age tables, although frequently inaccurate in themselves, have been no exception to this general rule.

Tables in the past have been in a very large measure, if not exclusively, based on single measurements instead of consecutive measurements on the same children; on children clothed instead of nude; on the use of the last birthday or gross age in place of the nearest birthday; on heterogeneous groups of children of different nationalities in place of relatively well developed homogeneous groups of American born children who have had medical inspection, physical training and directed play; on inaccurate measurements taken by numerous untrained observers in place of trained anthropometrists with standardized instruments, small units of measure and standardized technic. Accurate norms cannot be based on inaccurate data. The new Baldwin-Wood tables meet these requirements.

ABUSES OF WEIGHT-HEIGHT-AGE TABLES

The abuses of a table center in main around the instruments used for measuring, the methods of measuring and the recording and interpretation of data. When weight is to be taken, the scales should be standardized and balanced each day. They should be of recognized scientific make, graduated into ⅛ or 1/16 pound, if the English system is used. I, myself, have not found an accurate spring balance scale. Shoes and sweaters or coats should always be removed before weighing. (We weigh our preschool children nude on their birthdays each month and at the same time of day.) The weight of clothing varies somewhat with sex, age, height, weight and season, and to some extent with fashion and social status.

Most of the standing height measurements taken by nurses and nutrition workers are inaccurate, and vitiate the use of standards. Measurements taken by means of narrow rods, especially on weighing scales, are nearly always inaccurate. This measurement should be taken with an accurately graduated measuring scale against a flat surface at least 12 inches wide, with a flat "square" at least 4 inches wide and 6 inches deep. A uniform position is very important. The child stands straight with shoes off, heels together, and heels, buttock, upper part of back and head against the board to which the scale is attached. The arms are held at the side in a natural position, and the head is in such a position that the visual axis is horizontal. The square may be held in either hand of the examiner, and the reading taken from the opposite margin of the scale. The square is brought down firmly on the top of the child's head, with sufficient force to feel the contact.

It is surprising how many measurements in our public schools are inaccurately recorded, how many are wrongly calculated, and how many dates of birth a child may have on record at the school as reported by the father, mother, brother or sister, or the child. The date of birth and date of measurement should always be recorded. In calculating ages, the nearest birthday is taken. Inaccurate instruments, inaccurate measuring, and inaccurate recording of data are responsible for many abuses of indexes of growth and nutrition.

Girls' and boys' measurements should be recorded on different colored cards or sheets, to avoid confusion. The standards are buff for boys and white for girls. The cards should be designed to include six years of measurements. When physicians, nutrition workers and physical training teachers are not particularly prepared for detailed, careful measuring, this phase of the health work should be under the direction of the science or mathematics department of the school. Every school in America should require height measurements on the pupils twice each year, and the weight measurements at least every two or three months. Underweight children should be weighed monthly or biweekly. Teachers and health workers should understand that the weight tables supplement and contribute directly to physical examinations. They are not supposed to take the place of a medical examination. They are guiding instruments, not finalities. Normal growth in weight and height is probably the best single index of good health and good nutrition during childhood.

THE BASIC ESSENTIALS OF HEALTH EXAMINATIONS

The nature of the physician's physical examination is dependent on the location of the community and the ages of the children, as well as on the criteria of good health. For example, in some communities glandular disturbances, especially goiter, are prevalent for high school children, while in other communities adenoids and enlarged tonsils are found among a higher percentage of younger children. The physical examination should include at least a careful examination for the after-effects of the important recent diseases and for the condition of glands, eyes, ears, heart, lungs, muscles, bone and skin. Some of these conditions

* Abstract of address given before the International Health Congress, San Francisco, July 4, 1923, held under the auspices of the American Child Health Association, New York.

affect growth more seriously than others, some apparently not at all. A special dental examination should be included with reference to the eruption of teeth as an index of development, their care and physical condition, caries, abscesses and occlusions.

It is not sufficient to have a picture of the child's physical condition, but its physical capacity and output of energy must also be measured and evaluated. Physical achievement ratings and simple strength tests with a hand dynamometer or by the Martin method will help to give an insight into the child's physical energy. Physical achievement ratings may include at least a the general physical appearance and type of child, with particular reference to posture, muscular development and tonus, facial expression, breathing, color and appearance of the eyes. Health habits, with particular reference to food, sleep, ventilation and exercise, also should be noted carefully. Intimate cooperation with the nurse, hygienist, the classroom teacher, the visiting teacher, the councilor and the parent is always necessary.

In dealing with a height-weight-age table in a modern school, other measurements, such as breathing capacity, width and depth of chest, width of shoulders and hips,

TABLE 1.—*Weight, Height and Age Table for Boys of School Age*

Height, Inches	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years	11 Years	12 Years	13 Years	14 Years	15 Years	16 Years	17 Years	18 Years	19 Years	Height, Inches
38	34	34*	..	..	..	..	..	..	..	..	..	..	..	..	..	38
39	35	35*	..	..	..	..	..	..	..	..	..	..	..	..	..	39
40	36	36*	..	..	..	..	..	..	..	..	..	..	..	..	..	40
41	38	38	38*	..	..	..	..	..	..	..	..	..	..	..	..	41
42	39	39	39*	39*	..	..	..	..	..	..	..	..	..	..	..	42
43	41	41	41*	41*	..	..	..	..	..	..	..	..	..	..	..	43
44	44	44	44	44*	..	..	..	..	..	..	..	..	..	..	..	44
45	46	46	46	46*	46*	..	..	..	..	..	..	..	..	..	..	45
46	47*	48	48	48	48*	..	..	..	..	..	..	..	..	..	..	46
47	49*	50	50	50	50*	50*	..	..	..	..	..	..	..	..	..	47
48	..	52	53	53	53	53*	..	..	..	..	..	..	..	..	..	48
49	..	55	55	55	55	55	55*	..	..	..	..	..	..	..	..	49
50	..	57*	58	58	58	58	58*	58*	..	..	..	..	..	..	..	50
51	..	..	61	61	61	61	61	61*	..	..	..	..	..	..	..	51
52	..	..	63	64	64	64	64	64	64*	..	..	..	..	..	..	52
53	..	..	66*	67	67	67	67	68	68*	..	..	..	..	..	..	53
54	..	..	..	70	70	70	70	71	71	72*	..	..	..	..	..	54
55	..	..	..	72*	72	73	73	74	74	74*	..	..	..	..	..	55
56	..	..	..	75*	76	77	77	77	78	78	80*	..	..	..	..	56
57	..	..	..	..	79*	80	81	81	82	83	83*	..	..	..	..	57
58	..	..	..	..	83*	84	84	85	85	86	87	..	..	..	..	58
59	..	..	..	..	..	87	88	89	89	90	90	90	..	..	..	59
60	..	..	..	..	..	91*	92	92	93	94	95	96	..	..	..	60
61	..	..	..	..	..	..	95	96	97	99	100	103	106*	..	..	61
62	..	..	..	..	..	..	100*	101	102	103	104	107	111	116*	..	62
63	..	..	..	..	..	..	105*	106	107	108	110	113	118	123	127*	63
64	..	..	..	..	..	..	....	109	111	113	115	117	121	126	130*	64
65	..	..	..	..	..	..	....	114*	117	118	120	122	127	131	134	65
66	..	..	..	..	..	..	....	....	119	122	125	128	132	136	139	66
67	..	..	..	..	..	..	....	....	124*	126	130	134	136	139	142	67
68	..	..	..	..	..	..	....	....	....	134	134	137	141	143	147	68
69	..	..	..	..	..	..	....	....	....	137	139	143	146	149	152	69
70	..	..	..	..	..	..	....	....	....	143	144	145	148	151	155	70
71	..	..	..	..	..	..	....	....	....	148*	150	151	152	154	159	71
72	..	..	..	..	..	..	....	....	....	....	153	155	156	158	163	72
73	..	..	..	..	..	..	....	....	....	....	157*	160	162	164	167	73
74	..	..	..	..	..	..	....	....	....	....	160*	164	168	170	171	74

		Age 6 Years	7 Years	8 Years	9 Years	10 Years	11 Years	12 Years	13 Years	14 Years	15 Years	16 Years	17 Years	18 Years	19 Years
Average Height, Inches	Short...	43	45	47	49	51	53	54	56	58	60	62	64	65	65
	Medium	46	48	50	52	54	56	58	60	63	65	67	68	69	69
	Tall.....	49	51	53	55	57	59	61	64	67	70	72	72	73	73
Average Annual Gain, Lbs.	Short..	3	4	5	5	5	4	8	9	11	14	13	7	3	..
	Medium	4	5	6	6	6	7	9	11	15	11	8	4	3	..
	Tall....	5	7	7	7	7	8	12	16	11	9	7	3	4	..

Age is taken at the nearest birthday; height at the nearest inch; and weight at the nearest pound. A child is considered 6 years old at any time between 5½ and 6½ years. The following percentage of net weight has been added for clothing (shoes, coats, and sweaters are not included): for weights from 35 to 63 pounds, 3.5 per cent. of net weight; for weights 64 pounds and over, 4 per cent. of net weight. The figures not starred represent exact averages in round numbers. The starred figures represent smoothed or interpolated values. Printed by the American Child Health Association, New York, and the Iowa Child Welfare Research Station, State University of Iowa, Iowa City.

short dash, a broad jump and throwing a basketball. It is strikingly significant how far the physical examiner and nutrition workers have neglected to use their ally, the physical training teacher. Physical development is a much more complex phenomenon than has heretofore been recognized. *The health and nutrition problem is one of community of effort and exchange of data on the part of all health and educational agencies working with the child.*

A nutrition rating, in addition to the foregoing, and in addition to the careful evaluation of overweight and underweight measurements based on consecutive examinations of the same children, in order to get the gains or increments in growth, should take into account and sitting height or stem length should be included, if possible. It is also essential that a rating for physiologic age be included. Tall, heavy children are older, as a rule, physiologically, than small children of a given chronological age. Ossification of the bones, development of the breasts, the growth of axillary hair and menstruation take place earlier for physiologically accelerated girls, and the characteristic stages of adolescence occur earlier for the boys. Some boys are pubescent at 12 years of age, and others not until 17 years of age. Some girls are pubescent at 10 years of age, and others not until 18 years of age. My 10,000 individual growth curves, covering several years for thirty physcial traits (300,000 individual growth

curves) show that children grow differently before, during and after pubescence. Boys also grow differently from girls. Tall children grow differently from short children; growth varies with chronological age as well as with the more general conditions of nationality, heredity, climate, social status, environment, health, hygiene, exercise and food.

A mental age rating and an educational rating will very frequently be of direct service to the person applying the tables, especially if precocious or mentally defective children are among those being studied. I am now applying practically the foregoing basic essentials, together with a number of other facts and criteria, in a cooperative research experiment on the relation of physical and mental growth to school promotion in the Cleveland public schools in Ohio and in the University of Iowa laboratory schools. The health work at the Elizabeth McCormick Memorial in Chicago is also carrying out a part of this program.

Health education is an integral part of all first class public school systems. Physical measurements and physical examinations are an essential part of health education. Health ratings are just beginning to be considered a potent factor in school promotions. In a very few years, every good school system will include health education ratings on the same basis on which they now include mental examinations and educational achievement ratings in arithmetic or language.

TABLE 2.—*Weight, Height and Age Table for Girls of School Age*

Height, Inches	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years	11 Years	12 Years	13 Years	14 Years	15 Years	16 Years	17 Years	18 Years	Height, Inches
38	33	33	..	..	..	..	..	..	..	..	..	..	..	..	38
39	34	34	..	..	..	..	..	..	..	..	..	..	..	..	39
40	36	36	36*	..	..	..	..	..	..	..	..	..	..	..	40
41	37	37	37*	..	..	..	..	..	..	..	..	..	..	..	41
42	39	39	39	..	..	..	..	..	..	..	..	..	..	..	42
43	41	41	41	41*	..	..	..	..	..	..	..	..	..	..	43
44	42	42	42	42*	..	..	..	..	..	..	..	..	..	..	44
45	45	45	45	45	45*	..	..	..	..	..	..	..	..	..	45
46	47*	47	47	48	48*	..	..	..	..	..	..	..	..	..	46
47	49*	50	50	50	50	50*	..	..	..	..	..	..	..	..	47
48	..	52	52	52	52	53*	53*	..	..	..	..	..	..	..	48
49	..	54	54	55	55	56	56*	..	..	..	..	..	..	..	49
50	..	56*	56	57	58	59	61	62*	..	..	..	..	..	..	50
51	..	..	59	60	61	61	63	65	..	..	..	..	..	..	51
52	..	..	62*	64	64	64	65	67	..	..	..	..	..	..	52
53	..	..	66*	67	67	68	68	69	71*	..	..	..	..	..	53
54	..	..	..	69	70	70	71	71	73*	..	..	..	..	..	54
55	..	..	..	72*	74	74	74	75	77	78*	..	..	..	..	55
56	..	..	..	..	76	78	78	79	81	83*	..	..	..	..	56
57	..	..	..	..	80*	82	82	82	84	88	92*	..	..	..	57
58	..	..	..	..	..	84	86	86	88	93	96*	101*	..	..	58
59	..	..	..	..	..	87	90	90	92	96	100	103*	104*	..	59
60	..	..	..	..	..	91*	95	95	97	101	105	108	109	111*	60
61	..	..	..	..	..	..	99	100	101	105	108	112	113	116	61
62	..	..	..	..	..	..	104*	105	106	109	113	115	117	118	62
63	..	..	..	..	..	..	..	110	110	112	116	117	119	120	63
64	..	..	..	..	..	..	..	114*	115	117	119	120	122	123	64
65	..	..	..	..	..	..	..	118*	120	121	122	123	125	126	65
66	..	..	..	..	..	..	..	..	124	124	125	128	129	130	66
67	..	..	..	..	..	..	..	..	128*	130	131	133	133	135	67
68	..	..	..	..	..	..	..	..	131*	133	135	136	138	138	68
69	..	..	..	..	..	..	..	..	..	135*	137*	138*	140*	142*	69
70	..	..	..	..	..	..	..	..	..	136*	138*	140*	142*	144*	70
71	..	..	..	..	..	..	..	..	..	138*	140*	142*	144*	145*	71

		Age												
		6 Years	7 Years	8 Years	9 Years	10 Years	11 Years	12 Years	13 Years	14 Years	15 Years	16 Years	17 Years	18 Years
Average Height, Inches	Short	43	45	47	49	50	52	54	57	59	60	61	61	61
	Medium	45	47	50	52	54	56	58	60	62	63	64	64	64
	Tall	47	50	53	55	57	59	62	64	66	66	67	67	67
Average Annual Gain, Lbs.	Short	4	4	4	5	6	6	10	13	10	7	2	1	..
	Medium	5	5	6	7	8	10	13	10	6	4	3	1	..
	Tall	6	8	8	9	11	13	9	8	4	4	1	1	..

The methods employed are the same as described in Table 1. The following percentage of net weight has been added for clothing (shoes and sweaters are not included): for weights from 35 to 65 pounds, 3 per cent. of net weight; for weights from 66 to 82 pounds, 2.5 per cent. of net weight; for weights from 83 pounds and over, 2 per cent. of net weight.

PHYSICIANS' RATINGS AND WEIGHT-HEIGHT-AGE TABLES

If physicians are asked to rate children into five classes with 1 as the best and 5 as the most defective groups in general health and development, undernourished children, as a rule, will be ranked in Classes 3, 4 and 5. The decidedly overweight child should be as much a subject of pathologic study as the underweight child. The physicians still use, and no doubt will always use, underweight and overweight as one of the best single indexes of malnutrition and retarded growth. The chief difficulty has been and will continue to be to know what weight is normal for individual children. Our new tables accurately represent the growth of the children included, and may well be used as definite standards for the development of subsequent tables for different nationalities, for different social groupings and for different types of children. Since the tables are based on individual growth curves of American born children, and since from twelve to eighteen normal zones are given for each age and from five to ten zones for each inch in height, many individual differences are taken into consideration.

VARIABILITY IN GROWTH

There is a high positive correlation between growth in height and growth in weight. The correlation is higher for boys than for girls. Growth in weight is

more variable for a given age and from year to year than growth in height. The variability differs with height, with age and with sex.

Calculating the variability in pounds for each inch in height for each sex for our group of school children, it is found that the mean variability, or 58 per cent. of the cases, includes about all of the children in the normal zone of the distribution (i. e., without marked physical defects). The mean deviations or the average variability for each inch for children 7 years of age in the schools listed is 3.3 pounds for boys and girls, or 6 per cent. of the average weight for each inch of height. At 11 years of age, the boys vary on an average 6.4 pounds per inch, or 9 per cent., and the girls 7.4 pounds, or 9 per cent. At 15 years of age, the average variation for the boys is 9 pounds, or 7 per cent. and for the girls, 11 pounds, or 9 per cent.

These limits are not mere magic lines, which differentiate well and sick children; they simply indicate how the majority of children in fairly good health cluster around a central tendency or average for each inch in height at different chronological ages. Since the children in our groups are presumably healthy and have had physical training, medical inspection and careful remedial treatment, they can be used as good standards of growth. For children less healthy than our groups, which probably means a large percentage of those in public and private schools, the average deviation would include more unhealthy children. Until further scientific ratings by physicians have been acquired, it is safe to say that all children between the ages of 6 and 11 who are at least 6 per cent. or more underweight for height in inches, and all children from 11 to 16 years of age who are at least 8 per cent. underweight for height, should receive special examinations for health and nutrition, in addition to the regular annual physical examination. Physicians will have to determine the percentage limitations for different groups of children.

INCREMENTS, OR GAINS IN GROWTH

The greatest annual increment of growth in pounds for tall girls is at 13 to 14 years of age, when the average is 13 pounds yearly; for short girls the greatest increment is at 11 to 12 years, when the average is 13 pounds yearly. For tall boys, the greatest increment is at 13 to 14 years, when the average is 16 pounds and for short boys at 15 to 16 years, when the average is 14 pounds. The tables give the yearly increments for tall, medium and short children at different ages. The semiannual or quarterly increment can be calculated, if desired, by dividing these averages by 2 or 4, and the interpolated values used. This does not take seasonal variations into account, but no one knows as yet the effects of seasonal and vacational variations in different parts of the country. The increments for each inch in height and each year in age for each sex can also be readily calculated from the tables by subtracting the preceding measurements from the subsequent ones for each inch and each age. The resulting table will show how much children should gain for each inch in height and how much children of the same height should differ in weight for each year in age. For example, at 7 years of age, children differ 2 pounds an inch in height. From 12 to 18 years of age, children differ as much as 15 pounds for the same height.

Single measurements give a cross section of a child's physical status at the time they are made. However, the most important question is not how large or how small a child is at a given age, since children vary in size with nationality, heredity, season, etc. It is more important to know whether the child is growing properly. This can be determined by measuring the child year by year and comparing the height and weight with the standards given in the accompanying tables.

It is for the consistent, careful and intelligent use of weight-height-age indexes of growth that our health organizations have steadfastly stood and not for their misuse, abuse or exploitation.

SOURCE OF THE MATERIAL FOR THE TABLES

In the preparation of these tables, the aim has been to secure data concerning growth, by observations, on those who might be considered healthy children. The children whose records are included in the tables have had good heredity and environmental advantages, with school medical inspection, directed play, physical training and instruction in hygiene, and are representative of well developed types for normal standards.

The data included in the tables are drawn from the records of 74,000 boys and 55,000 girls. From these gross figures there have been included only those children who are presumably healthy and on whom from five to fourteen consecutive measurements have been taken, nearly all of these being at yearly intervals. The measurements were taken by trained examiners, with standard methods on nude children from eleven of the best schools in America.[1] At least 95 per cent. of the children were American born.

My study of several thousand individual growth curves, based on repeated measurements of the same children, shows that tall children as a rule remain tall, and that short children as a rule remain short, although there are exceptions. Tall children also tend to mature earlier and to reach their final stature earlier than short children. They are usually accelerated physiologically.

METHOD OF USING THE TABLES

The use of the tables may be illustrated thus: Take, for example, a 14 year boy who is 64 inches tall. By following numbers horizontally opposite the figure 64 it will be found that he should weigh 113 pounds. A 12 year old boy who is 64 inches tall should weigh 109 pounds, and an 18 year old boy should weigh 126 pounds.

Age is taken at the nearest birthday; height at the nearest inch, and weight at the nearest pound. A child is considered 6 years old at any time between 5½ and 6½ years.

A deviation of only a few pounds from normal weight is not considered significant, but children under 10 years who are 6 per cent. or more underweight for their height and age, and those over 10 years who are 8 per cent. or more underweight for their height and age, are likely to be in need of medical attention. Children who are 15 per cent. overweight for their height and age may also be in need of medical attention.

1. Further details are given by Baldwin, B. T., and Wood, T. D.: Weight-Height-Age Tables, Mother and Child, July 23, 1923, supplement, New York, American Child Health Association.

High Standard for Dr.P.H. Degree.—It would probably be unfortunate to standardize the curriculum or program required for the Dr.P.H. degree at this time. It is, however, important that the standard of the degree shall be kept high and that a student who obtains the Dr.P.H. degree without having previously secured his degree in medicine shall be required to complete all of the work in the field of medicine which is really essential for his task in public health administration.—*Am. J. Pub. Health* **13**:839 (Oct.) 1923.

TRYPARSAMIDE

ITS ACTION AND USE *

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The study of tryparsamide as an agent for the treatment of trypanosomiasis and syphilis is now approaching a decisive stage, having passed successively through a period of laboratory investigation and a period of preliminary clinical investigation. The results that have been reported on the one hand by Pearce,[1] by Chesterman[2] and by Smillie,[3] and on the other by Lorenz, Loevenhart, Bleckwenn and Hodges,[4] and by Moore, Robinson and Keidel,[5] supplemented by numerous personal reports from still other clinicians, leave little doubt that, used with discrimination, tryparsamide will prove valuable in the treatment of human and animal trypanosomiasis and of certain forms of syphilis.

Thus far, each step in the progress of these investigations, from the synthesis of the drug to its application to the treatment of diseases, has proceeded as a logical development, based at first on pure experimental evidence and later on clinical experience as well, and it is hoped that the further use of the drug may be continued in a way to insure the greatest benefits with a minimum of untoward effects. If this hope is to be realized, it is necessary that those who employ tryparsamide therapeutically should not only have a knowledge of the methods that have been used and the results that have been obtained in actual practice, but also a clear understanding of the particular properties that characterize its action in the animal organism. This is especially true since it may require years of precise observation to determine what are the best methods for employing the drug and what may be accomplished by its use in syphilis and trypanosomiasis, and possibly in still other diseases. Furthermore, the action of tryparsamide differs materially from that of any other drug that has been employed in the treatment of either trypanosomiasis or syphilis.

At the moment, the greatest interest in tryparsamide centers about its use in syphilis, especially in general paralysis; but this phase of the subject cannot be separated completely from trypanosomiasis, not because there is any essential connection between its action on trypanosomes and on spirochetes, but because other qualities of action that are of great importance in the treatment of syphilis are best shown by the action of the drug in advanced cases of experimental trypanosomiasis (rabbits).

The action of tryparsamide in experimental animals, and the considerations that led to its use, have been touched on in the reports of Pearce [1] on trypanosomiasis, and of Lorenz, Loevenhart, Bleckwenn and Hodges [4] and of Moore, Robinson and Keidel [5] on syphilis; but these statements are insufficient to give one a clear understanding of the principles that are involved in the use of the drug, and the significance that may be attached to different features of its action.

Moreover, while a full account of the action of tryparsamide in experimental animals was given in the earlier reports of Brown and Pearce,[6] no attempt was made to analyze the results from the standpoint of their practical application to the treatment of disease. In fact, it was stated in the concluding paragraph of the paper on spirochete infections that, "as set forth in the literature, the facts and principles upon which such experiments depend are so few as to offer almost no basis for an interpretation of these experiments." Further, that when we had had an opportunity of reporting our own experience in dealing with these infections, we might return to a consideration of the facts here reported.

In this paper we have attempted to bring together the essential points bearing on the subject of the action and use of tryparsamide, and to discuss them in a manner that will be helpful to those who contemplate the use of this drug.

TRYPARSAMIDE AND THE CONSIDERATIONS THAT LED TO ITS USE

Tryparsamide was synthesized by Jacobs and Heidelberger,[7] and its biologic action was studied by Brown and Pearce in 1915. The first publication [6] on this drug did not appear, however, until November, 1919; and, while there were definite plans for the clinical use of tryparsamide, no systematic clinical investigations could be undertaken until late in 1919 and in the summer of 1920, when work was started in both trypanosomiasis and syphilis.

The considerations that led to the selection of this drug for the treatment of these diseases may be divided into three groups: first, action on the animal organism; second, action in animals infected with trypanosomes and spirochetes, and, third, certain facts relating to the biology of syphilitic infections and the part played by animal resistance in determining the course of this disease.[8] In discussing these subjects, we may begin with a brief summary of the more important features of biologic action.

Action on the Animal Organism.—The action of tryparsamide on the animal organism is unusual in many respects, and, on account of its importance, may be considered in some detail. Very slight local irritation is produced by subcutaneous or intramuscular injections, and, in view of the high arsenic content (25.32 per cent.), the dose that can be administered to laboratory animals by any route is very large; there is also a comparatively narrow zone of separation between the lethal dose and the dose that produces no apparent functional

* From the Laboratories of the Rockefeller Institute for Medical Research.

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5. Moore, J. E.; Robinson, H. M., and Keidel, A.: Tryparsamide in the Treatment of Syphilis, to be published.

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7. Jacobs, W. A., and Heidelberger, M.: J. Am. Chem. Soc. **41**: 1581, 1917; J. Exper. Med. **30**: 411 (Nov.) 1919.

8. Various aspects of this subject have been discussed in the following papers: Brown, W. H., and Pearce, Louise: Experimental Production of Clinical Types of Syphilis in the Rabbit, Arch. Dermat. & Syph. **3**: 254 (March) 1921; Defensive Reactions of Animals Infected with Spirochaeta Pallida, J. A. M. A. **67**: 1619 (Nov. 19) 1921; Animal Resistance and the Endocrine System of the Rabbit in Experimental Syphilis, Proc. Soc. Exper. Biol. & Med. **20**: 476, 1923; Factors Concerned in the Production of Lesions of the Eye in Experimental Syphilis, New York State J. Med. **23**: 376 (Sept.) 1923.

or organic impairment. Moreover, after the administration of a toxic but still sublethal dose, all manifestations of intoxication develop promptly, while recovery is both rapid and complete. This mode of action suggests two things; namely, that the drug produces no serious depression of vital processes, and that it should be possible to repeat the administration of comparatively large doses at relatively short intervals. It was, indeed, found that doses slightly below the lethal level could be given at weekly intervals over a long period without the production of cumulative toxic effects or increased sensitiveness to the action of the drug, but rather with increased tolerance so that eventually the dose might be raised to a level well above that at which the drug is ordinarily fatal.

Most important of all, however, was the fact that tryparsamide produced a remarkable stimulative effect on the animal organism in both normal and diseased animals. Even small doses led to an immediate improvement in general appearance, activity and weight of treated animals.

The only unfavorable features of the action of tryparsamide that were noted were a somewhat irregular tolerance on the part of different animal species and the occurrence of peculiar nervous symptoms of a type that has characterized the action of at least two arsenicals that subsequently were found to be prone to the production of amblyopia (atoxyl and arsacetin). In all other respects, the action of tryparsamide was unusually favorable. In fact, its action was so unusual that in our series of 243 arsenicals there was no other substance that combined so many favorable qualities of action. This, of course, immediately marked this drug as one worthy of careful consideration.

Therapeutic Action.—The therapeutic action displayed by tryparsamide in animals is also unusual in several respects. Its trypanocidal index (ratio of curative to tolerated or toxic dose), as determined by the usual methods, is fairly good but by no means equal to that of a number of well known substances, such as arsphenamin and neo-arsphenamin, and it is distinctly inferior to that of arsenophenylglycin or even arsacetin.[9] From one twelfth to one eighth of the tolerated dose was required to cure mice infected with *T. brucei, T. gambiense* and *T. equinum*, while still larger doses were required for other species of trypanosomes. Thus, the therapeutic index of tryparsamide is only about two thirds that of arsacetin or arsenophenylglycin, and from one fourth to one third that of arsphenamin or neo-arsphenamin.

If, therefore, the therapeutic value of the drug were to be gaged on the basis of its therapeutic index, it could not be given serious consideration. It so happens, however, that while therapeutic tests on mice and rats may give a fairly accurate indication of what may be termed *potential* trypanocidal activity, they do not necessarily convey any idea of *actual curative value*, since the disease in these animals is of a wholly different character from that in man or the larger domestic animals.[10] The rabbit is, from this point of view, a more satisfactory test animal, since the experimental infection shows practically all of the conditions that characterize trypanosome infections in man, including involvement of the central nervous system.

It is important to note, therefore, that, in spite of the comparatively low therapeutic index, tryparsamide proved to be highly effective in the treatment of rabbits. It was found that approximately the same unit dose was capable of curing well developed infections in rabbits as was required to cure the more acute blood stream infections of mice. This result is exceptional. For example, the dose of arsphenamin or neo-arsphenamin per unit of body weight that was required to cure comparable infections in rabbits was from four to six times as large as that required to cure mice, while with luargol, whose therapeutic index is much higher than either of these drugs, even more than six times the curative dose for mice had little effect. The action of atoxyl and arsacetin is, however, more like that of tryparsamide in this respect.

Our purpose in dwelling on this point is to emphasize the importance of the use of an infection such as that in the rabbit as a crucial test of the ability of a drug to effect an actual cure of trypanosomiasis in contradistinction to mere potential trypanocidal action. In order to effect a cure, a drug must be capable of reaching all foci of infection and of unfolding a degree of action sufficient to destroy the parasites present. If, therefore, a drug cures a well developed infection in the rabbit in the same unit dose as is required to destroy parasites in the circulating blood, it is obvious that it must possess high therapeutic penetrability or else it could not exert a therapeutic effect in all parts of the body comparable to that displayed in the circulating blood.[11] It is this feature of the action of tryparsamide which, more than any other, finally led to its use in trypanosomiasis and contributed very largely to its use in neurosyphilis, although the use of the drug in this disease was determined primarily by other considerations.

The action of tryparsamide in spirochete infections presents a different situation. The spirocheticidal action of the drug is distinctly less than its trypanocidal action. It is not possible to obtain uniform sterilization of either mice or rats infected with *Spirochaeta obermeieri* by the use of the largest single dose that can be administered with safety. Still, with much smaller doses, the course of the infection could be influenced in a way to facilitate spontaneous recovery.

In the case of rabbits infected with *Spirochaeta pallida*, similar conditions prevailed. Large doses of tryparsamide are required to induce disappearance of spirochetes followed by permanent healing of active primary lesions. Here, again, the therapeutic index is low, being 1:1 or at most 1:2, as compared with similar figures for arsphenamin of from 1:7 to 1:10.

There is, however, even greater significance in the fact that the unit dose of tryparsamide required to cure a syphilitic infection in the rabbit (which is ordinarily a self-limiting disease) is from two to three times that required to cure a uniformly fatal infection such as trypanosomiasis. This is exactly the reverse of what occurs with arsphenamin, in which the unit dose required to cure trypanosomiasis is from two to three times that required to induce disappearance of spiro-

9. The comparisons of therapeutic indexes and statements made in this paper concerning other features of therapeutic action are based on control experiments carried out under the same conditions as the experiments with tryparsamide; but, when comparable data exist, the figures given are in essential agreement with those to be found in the literature.

10. Reference may be made to the two following papers, in which the value of the therapeutic index is discussed from the standpoint of the toxic factor and the character of the infection employed, respectively: Brown, W. H.: Bull. Johns Hopkins Hosp. **26**: 295 (Sept.) 1915. Pearce, Louise, and Brown, W. H.: J. Exper. Med. **28**: 109 (Aug.) 1918.

11. Recently, Voegtlin and his associates have reported results on the penetration of tryparsamide into the cerebrospinal fluid which appear to be in harmony with the results obtained by us, although no direct comparison can be made between the two sets of experiments on account of differences in the methods used (Voegtlin, Carl; Smith, M. J.; Dyer, Helen, and Thompson, J. W.: Penetration of Arsenic into the Cerebrospinal Fluid, Pub. Health Rep. **38**: 1003 [May] 1923).

chetes and bring about permanent healing of primary syphilitic lesions.[12] This feature of the action of arsphenamin, although not generally recognized, harmonizes with clinical experience. We interpreted this effect of tryparsamide as showing that the *direct curative action* of the drug was considerably less in syphilitic infections than in trypanosomiasis, a conclusion that is being borne out by clinical tests.

Nevertheless, smaller doses of tryparsamide are capable of impairing the activity of spirochetes, and frequently will induce healing of primary lesions without necessarily increasing the tendency to subsequent occurrence of more severe manifestations of disease. When, as occasionally happened, the activity of the lesions was increased under the influence of small doses, they proved to be early and rather active ones, as distinguished from old or inactive lesions, which usually respond favorably to the treatment.

Here, again, the action of tryparsamide is peculiar in that the favorable influence exerted on the course of disease is out of proportion to the immediate spirocheticidal action of the drug. Thus, the effects produced in spirochete infections are of essentially the same order as the changes that occur in spontaneous recovery. The remarkable feature of the action of tryparsamide in this class of infections is, therefore, its ability to augment and to hasten this spontaneous process. This type of action is unusual in that the majority of arsenicals, if used in doses insufficient to produce permanent healing of primary lesions, tend to increase the severity or to prolong the course of disease as shown by the recurrence or persistence of extensive local lesions, or by the occurrence of generalized lesions or combinations of these conditions.

COMMENT

The majority of reports dealing with the biologic action of specific therapeutic agents devote almost exclusive attention to a consideration of parasiticidal action as represented by the ratio of the toxic or tolerated dose to the so-called curative dose or, more recently, to the dose that will cause merely a disappearance of parasites from the circulating blood of mice or rats within a specified period of time. It has been assumed that the therapeutic value of drugs could be determined by simple comparisons of this kind and reduced to a numerical expression known as the therapeutic index.

These features of drug action are important, but from a practical point of view their value has been greatly overestimated. Few of the well known drugs fail to accomplish their purpose, because of lack of parasiticidal action per se or of a low therapeutic index as ordinarily determined. Failure has been due more often either to unfavorable action on the animal organism of a kind that did not enter into the determination of a lethal or tolerated dose (arsacetin and arsenophenylglycin) or inability to develop actual as distinguished from potential parasiticidal action under conditions that were necessary for a successful treatment of disease (the arsphenamins and their derivatives). Occasionally, both of these difficulties are encountered, and this appears to be the case with the drug known as Bayer 205, which is said to have the highest therapeutic index of any trypanocidal agent. The notable exception to this rule is atoxyl, which, in spite of a low therapeutic index (1:1 or 1:2) has proved almost, if not quite, as efficient as any of the more powerful trypanocidal agents.

If the usual methods of testing and evaluation had been employed with tryparsamide, it would have attracted no attention as a possible remedy for either trypanosomiasis or syphilis, especially as there were a number of substances among those studied by us whose therapeutic index of trypanocidal and of spirocheticidal action was far superior to that of tryparsamide. That attention was given it and that it has been used with such promise depends on other considerations. Hitherto, too much stress has been placed on parasiticidal action per se, and too little on other attributes of drug action. We were under no misapprehension with regard to the practical value of the therapeutic index as ordinarily determined.[13] The standard of evaluation employed by us was the ability of a drug to cure disease under conditions as closely analogous to those of the human disease as it is possible to obtain in laboratory animals. This is essentially the point of view of the clinician applied to laboratory experimentation. This system of evaluation presupposes accurate knowledge both of human and of animal disease, and also a knowledge of conditions that may favor or prevent the accomplishment of a given result, and finally the development of a system of testing and evaluation that will take into account all of those qualities of action that may have a bearing on the treatment of the disease under consideration.

In what way does this system of analysis apply to tryparsamide? It releases us from all theoretical conceptions of the relative importance of parasiticidal action as compared with other attributes of drug action, and focuses attention primarily on a consideration of the ability of the drug to cure disease irrespective of how this is accomplished.

If we consider tryparsamide from this broader point of view, there will be no difficulty in understanding how this drug came to be used and the place that it is expected to occupy in the treatment of trypanosomiasis and syphilis. In the first place, there are only two features of its action on the animal organism that need cause any concern. These are, first, the somewhat irregular tolerance on the part of different species of animals which left some doubt as to the size of the dose that might be used in man, and second, the occurrence of certain nervous effects which caused us fear as to possible injury to the optic nerve. The first patients treated in 1919 (Pearce) relieved anxiety on one of these points but confirmed misgivings on the other: there exists some danger of visual impairment. In all other respects, the action was favorable not only as regards convenience and safety and freedom from untoward effects, but equally so as regards beneficial effects.

The therapeutic possibilities of tryparsamide are to be considered in relation to: first, the parasiticidal action of the drug; secondly, penetrability and actual curative action as indicated by the effects produced in advanced cases of trypanosomiasis (rabbits), and, finally, the ability of the drug to influence the course of disease apart from any immediate parasiticidal action. It was apparent from the beginning that, so far as its specific action was concerned, tryparsamide was primarily a trypanocidal agent (hence its name) and that it should

12. This comparison of therapeutic action in trypanosomiasis and syphilis is of especial interest in view of the present tendency to estimate the therapeutic value of antisyphilitic remedies on the basis of their trypanocidal action.

13. Brown, and Pearce and Brown (Footnote 10). The position taken by us is essentially that suggested by Dale, H. H.: Chemotherapy, Physiol. Rev. 3: 359 (July) 1923.

be much more effective in the treatment of trypanosomiasis than syphilis. In fact, while there was every indication that the drug would prove of value in trypanosomiasis, there was some uncertainty as to what might be accomplished in syphilis, since here its use had to be based on considerations other than parasiticidal action, and there was no precedent to guide us except that supplied by clinical experience in the use of mercury and the iodids. This was sufficient, however, to encourage the hope that something might be accomplished in the treatment of syphilis, provided the proper conditions for its use could be determined.

So far as trypanosomiasis is concerned, the use of this drug presents no difficulties of comprehension. While its trypanocidal action is not great as compared with other trypanocidal agents, still, there was no known substance with an equal degree of trypanocidal action that possessed an equal degree of penetrability or, expressed in another form, there was no known substance that was capable of developing a comparable measure of actual parasiticidal action in those parts of the body in which it was most needed. Moreover, there was some evidence that, even in a disease such as trypanosomiasis, some beneficial effect might be derived from the stimulative action of the drug on animal economy, both as a means of combating the disease and as an aid in promoting processes of recuperation.

When we came to consider the use of tryparsamide in the treatment of syphilis, we were confronted by an entirely different situation. Here, little or nothing could be expected from the standpoint of spirocheticidal action—at least in those stages of the disease in which spirochetes are numerous in all parts of the body, or at a time when no resistance has been developed to oppose the progress of the infection, unless very large doses of the drug could be used. It is hardly necessary to say that, under conditions such as these, the surest means of effecting an immediate control of the infection is the use of some powerful spirocheticidal agent.

During later stages of the infection, when spirochetes have become localized in parts of the body that are therapeutically inaccessible to the ordinary spirocheticidal agent, or when the factor of resistance comes into play and the course of the disease is determined largely by the resistance that the individual can bring to bear,* therapy becomes a distinctly different problem. Here, one may with reason use measures that under other circumstances would be inapplicable. Treatment becomes a question of reaching inaccessible foci of infection, and this might be done either by the use of suitable spirocheticidal agents or by the use of agents whose primary function is to reinforce the resistance of the patient or, better still, by the use of substances that combine both of these qualities of action.

Under these conditions, potential spirocheticidal action is again of less moment than ultimate spirocheticidal action or the ability to develop therapeutic action where it is actually needed. Moreover, while certain classes of syphilitic affections occur with great frequency and are rarely prevented by ordinary processes of resistance, others occur less often, thus indicating that they are more readily prevented and hence that they might be more readily influenced by measures that serve to increase natural processes of resistance.

Briefly stated, these are the considerations that led to the use of tryparsamide in syphilis. There is as yet no simple or direct experimental method of approaching the treatment of syphilis from this point of view. One has to be guided by conceptions, more or less theoretical, of the biology of syphilitic infections based on experience with human and experimental syphilis.

However, from the data available, it appeared that, although tryparsamide possesses only a small measure of spirocheticidal action, this might be utilized to advantage where penetrability is a decisive factor in determining results, and that in properly selected cases the ability of the drug to influence the course of disease or to reinforce processes of resistance might be of even greater value. At any rate, it appeared that the combination of these two properties might accomplish results that could not be accomplished by more powerful spirocheticidal agents that do not possess these particular properties.

Accordingly, tryparsamide was first used for the treatment of debilitated patients with latent infections or with inactive or regressing lesions—primarily for the purpose of improving their general physical condition so that treatment of the usual type might be carried out to better advantage. In patients of this class, not only was there an improvement in physical condition, but the healing of lesions was promoted and some change was effected in blood serologic findings. A little later, a few patients with active primary or secondary lesions were also treated, but in these the lesions were either unaffected or their activity was increased to such an extent that, for the time being, the use of the drug was discontinued in patients showing such lesions.

Finally, through the cordial cooperation of Dr. A. S. Loevenhart of the University of Wisconsin, an opportunity was afforded for making a careful study of the action of tryparsamid in neurosyphilis with especial reference to general paralysis. On account of the peculiar circumstances surrounding infections of this class, it appeared that drugs possessing the properties of tryparsamid might be used to especial advantage. According to our conception of the biology of syphilitic infections, involvement of the central nervous system is primarily a matter of defective or ineffectual resistance—a conception that is applicable irrespective of any decision that may be reached as to the character of the spirochete concerned in these infections. Moreover, it appears that the conditions for the growth of spirochetes in the tissues of the central nervous system are not so good as in many other parts of the body, and hence their resistance to noxious influences should be correspondingly less.[14]

As may be seen, these conditions are such as would enable a drug with a moderate or even low spirocheticidal action to produce a maximum effect in the central nervous system, provided it possessed a high degree of penetrability. What is more important, however, is the opportunity afforded for inducing an involution of the infection by reinforcing natural processes of resistance, as has been done by the use of various methods of nonspecific stimulation. Obviously, this applies to infections involving the nervous tissue of the brain and cord more than it does to those of other parts of the nervous system which occupy a different position in the general scheme of evolution of syphilitic infections.

In conclusion, it may be said that, from the practical point of view, the most important features of the action of tryparsamide are: comparative freedom from untoward effects, a moderate degree of trypanocidal action and slight but definite spirocheticidal action, an

14. These statements are all covered by references given above (Foot note 8).

unusually high penetrability which enables it to develop a high actual as compared with its potential parasiticidal action, and a remarkable power of reinforcing processes of natural resistance and of promoting recuperation. Therefore, the use of the drug should be directed with a view to utilizing these resources and not from the standpoint of a powerful parasiticidal agent.

SUMMARY

A study of the action of tryparsamide on the animal organism and on experimental infections produced by trypanosomes and spirochetes showed that, although the drug exhibits no unusual parasiticidal effect, it possesses properties of action which peculiarly adapt it to the treatment of trypanosomiasis and to certain classes of syphilitic infections, especially those that call for the use of drugs with high penetrability as well as those that might be influenced favorably by reinforcement of processes of natural resistance. The use of the drug is advocated on this basis rather than on the basis of high potential parasiticidal action.

THE EFFECTS OF SALINE CATHARTICS IN CONDITIONS OF DEHYDRATION *

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Numerous investigations within recent years have demonstrated the importance of changes in blood concentration in various experimental and clinical conditions. It has been shown,[1] for example, that the saline purgatives produce their characteristic effect, in large measure at least, by withdrawing fluid from the blood. In view of the extensive use of saline purgatives, it is desirable to have knowledge of their effects on blood concentration in conditions associated with water deprivation. The present communication outlines the results of such an investigation.

INFLUENCE OF SALINE PURGATIVES IN A CONDITION OF WATER DEPRIVATION

Methods.—Normal adult female dogs were maintained without food and water during the period of experimentation. After periods of from seven to nine days, these animals were given, by stomach tube, doses of either potassium and sodium tartrate (Rochelle salt), sodium sulphate (Glauber's salt) or magnesium sulphate (Epsom salt). Hemoglobin estimations were made by the method of Cohen and Smith. Control experiments were made on fasting animals, water being allowed.

An inspection of Tables 1 and 2, in which are detailed experiments with animals deprived of both food and water for a number of days, will show that after the establishment of a condition of concentrated blood, the introduction of either potassium and sodium tartrate, sodium sulphate or magnesium sulphate has little or no influence in augmenting blood concentration. In fact, in some instances there is exhibited a tendency toward blood dilution. In no case did any of the saline administered produce purgation.

The administration of magnesium sulphate to an animal with concentrated blood produces very striking effects. In a few minutes the animal becomes too weak to stand. In a period of twenty minutes there are spastic movements of the feet; respiration becomes at first irregular and rapid, later regular but slow, *and a complete anesthesia develops, which is maintained for a period of two and one-half hours.* In certain instances the administration of magnesium sulphate under these circumstances caused death from medullary depression.

That the initial condition of concentrated blood is responsible for this unusual effect of magnesium sulphate may be inferred from the results of observations on control animals in which fluid was allowed, although food was withheld. In spite of the fact that in two of these animals no purgation resulted after administration of magnesium sulphate, the anesthetic effect also was lacking. It is not unusual, in fasting, for the saline purgatives to fail to produce their usual typical effects, even though, as in Dog 10, the saline administration causes a significant concentration of the blood.

It is generally accepted that these saline purgatives produce purgation by nonabsorption of the fluid in which they are dissolved plus an additional quantity of fluid withdrawn from the blood. The present experimental results tend to indicate that, with a significantly increased blood concentration induced by water deprivation, no fluid is withdrawn from the blood by the saline purgatives but, on the contrary, that salt and possibly the fluid are absorbed into the blood. The dose of potassium and sodium tartrate or sodium sulphate

TABLE 1.—*Effect of Potassium and Sodium Tartrate and of Sodium Sulphate in a Condition of Water Deprivation*

Potassium and Sodium Tartrate				Sodium Sulphate			
Dog 1		Dog 2		Dog 3		Dog 4	
Day	Hemoglobin in Percentage of Normal	Day	Hemoglobin in Percentage of Normal	Day	Hemoglobin in Percentage of Normal	Day	Hemoglobin in Percentage of Normal
1	100	1	100	1	100	1	100
2	100	2	107	2	106	2	111
3	112	3	117	3	105	3	116
4	...	4	...	4	...	4	...
5	109	5	115	5	...	5	...
6	...	6	...	6	109	6	128
7	110	7	115	7	106	7	131†
8	113*	8	119*	8	113†	After ½ hr.	131
After ½ hr.	115	After ½ hr.	121	After ½ hr.	111	1 hr.	128
1 hr.	111	1 hr.	120	1 hr.	107	1½ hr.	126
1½ hr.	112	1½ hr.	119	1½ hr.	108	2 hr.	137
2 hr.	112	2 hr.	121	2 hr.	111		

* 15 gm. of potassium and sodium tartrate in 100 c.c. of water. No diarrhea or other symptoms.
† 15 gm. of sodium sulphate in 100 c.c. of water. No diarrhea or other symptoms.

administered when absorbed provoked no recognizable symptoms in the animal. With the administration of magnesium sulphate, however, the symptoms produced were identical with those observed when this salt is given subcutaneously or intravenously. It is possible that the cause of death in those animals that died quickly after the administration of magnesium sulphate may readily explain the cause of death variously reported in certain cases of magnesium poisoning.

Meltzer and Lucas [2] have pointed out that, when the kidneys are impaired, the toxic effects of magnesium are greatly increased. Moreover, Meltzer and Auer [3]

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1. Underhill, F. P., and Errico, L.: J. Pharmacol. & Exper. Therap. **10**: 135 (March) 1922.

2. Meltzer, S. J., and Lucas, D. R.: J. Exper. Med. **9**: 298, 1907.
3. Meltzer, S. J., and Auer, J.: Proc. Soc. Exper. Biol. & Med. **11**: 95, 1914.

TABLE 2.—*Influence of Magnesium Sulphate in a Condition of Water Deprivation*

Day	Hemoglobin in Percentage of Normal	Comment
Dog 3		
1	100	
2	101	
3	97	
4	111	
5	...	
6	114	
7	110	
8	108	40 c.c. of saturated magnesium sulphate solution
After 20 min.	114	by stomach tube; animal soon became so weak
30 min.	114	it could not stand; then followed a few spastic
60 min.	112	movements; respiration became irregular and
90 min.	113	rapid, later slower and regular; still later, com-
120 min.	108	plete anesthesia for a period of two and one-
160 min.	111	half hours followed; no diarrhea
Dog 4		
1	100	
2	104	
3	108	
4	112	
5	108	
6	...	
7	117	
8	125	
9	129	40 c.c. of saturated magnesium sulphate solution
After 30 min.	129	by stomach tube
60 min.	129	
90 min.	129	
120 min.	128	
10	...	Found dead; symptoms with animal very similar to those of Dog 1; no diarrhea
Dog 5		
1	100	
2	105	
3	...	
4	113	
5	114	
6	113	
7	127	
8	133	
9	132	40 c.c. of saturated magnesium sulphate solution
After 30 min.	128	by stomach tube; no diarrhea; anesthesia as
60 min.	128	with Dog 1
90 min.	128	
120 min.	128	
10	133	
11	133	40 c.c. of magnesium sulphate solution as above
After 20 min.	...	Dead from medullary depression
Dog 6		
1	100	
2	107	
3	...	
4	109	
5	114	
6	114	
7	130	
8	131	
9	130	40 c.c. of magnesium sulphate as with Dog 1;
After 30 min.	123	anesthesia; no diarrhea
60 min.	121	
90 min.	118	
120 min.	131	
10	131	
11	128	40 c.c. of magnesium sulphate as before
After 20 min.	...	Dead from medullary depression
Dog 7		
1	100	
2	...	
3	112	
4	110	
5	109	
6	117	
7	119	
8	120	
9	119	Magnesium sulphate; nearly all vomited
After 90 min.	120	
2½ hr.	119	Magnesium sulphate as before
20 min.	...	Animal dead from medullary depression
Dog 8		
1	100	
2	...	
3	127	
4	129	
5	128	
6	134	
7	146	
8	158	40 c.c. of magnesium sulphate as usual
After 20 min.	...	Dead from medullary depression

have shown that death may be caused by absorption of magnesium given by mouth.

The results of the present experiments emphasize that caution should also be employed in the administration of magnesium sulphate in conditions in which there exists a possibility of concentration of the blood.

CONCLUSIONS

In conditions in which concentrated blood occurs, the common saline purgatives fail to effect purgation, and the blood concentration is not further augmented.

When increased concentration of the blood is present, magnesium sulphate administered by mouth will produce a general complete anesthesia lasting for a period of two or more hours. In certain instances, death follows very quickly from medullary depression.

TABLE 3.—*Control Experiments with Magnesium Sulphate* *

Dog 9		Dog 10		Dog 11	
Day	Hemoglobin in Percentage of Normal	Day	Hemoglobin in Percentage of Normal	Day	Hemoglobin in Percentage of Normal
1	100	1	100	1	100
2	104	2	104	2	101
3	106	3	103	3	102
4	101	4	101	4	100
5	107	5	107	5	101
6	104	6	111	6	101
7	104	7	100	7	100
8	102	8	107	8	103
9	104†	9	109§	9	101‖
After ½ hr.	113‡	After ½ hr.	110¶	After ½ hr.	105
1 hr.	117	1 hr.	118	1 hr.	112
1½ hr.	112	1½ hr.	113	1½ hr.	100
2 hr.	107	2 hr.	109	2 hr.	100#
10	110	10	112		

* Animals received water but no food.
† 40 c.c. of saturated solution of magnesium sulphate by stomach tube.
‡ Diarrhea.
§ 40 c.c. of saturated solution of magnesium sulphate by stomach tube.
¶ Vomited small amount; no diarrhea or anesthesia; throughout experiment, animal very apathetic and drank little water.
‖ 60 c.c. of saturated solution of magnesium sulphate by stomach tube.
No diarrhea, but formed stools.

These facts emphasize that caution should be employed in the administration of magnesium sulphate in conditions in which there exists a possibility of an increased concentration of the blood.

CARCINOMA OF THE RECTUM *

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In a survey of thirty-six cases of carcinoma of the rectum which have entered the surgical service of the Barnard Free Skin and Cancer Hospital since 1914, and eight cases observed in private work, I have been impressed with two points which appear to be significant. The first is that the earliest most frequent symptoms—bleeding and diarrhea—are not regarded by either patient or physician as indicative of the possibly serious nature of the disease. The second point is that carcinoma of the rectum frequently remains localized to the rectum and contiguous tissues for an unexpectedly long period of time.

Of the forty-four patients, twenty-three were men, and twenty-one, women. By decades, six occurred under 40 years of age; six between 40 and 49; twenty between 50 and 59; eight—all men—between 60 and 69, and four over 70. The youngest patient was a man, aged 27; the oldest, a woman, aged 79.

The duration of symptoms previous to consultation with any physician was: less than three months, four; from three to six months, three; from six to twelve

* From the Barnard Free Skin and Cancer Hospital.
* Read before the St. Louis Medical Society, Sept. 18, 1923.

months, fourteen; over twelve months, fifteen. The shortest duration was three weeks; several had symptoms of more than three years' duration. By far the most predominating symptoms were bleeding and diarrhea. These symptoms were either regarded lightly by the patients, or the patient's physician prescribed "medicine" without an examination. I found in the thirty-six clinic patients twelve, or 33 per cent., in whom the delay in proper treatment was due to faulty diagnosis on the part of the first physician consulted. In two cases, painful abscesses and fistulas were the first symptoms. In these cases the abscesses and fistulas were operated on apparently without a suspicion on the part of the operator that carcinoma was the underlying cause.

Twenty-four of the forty-four cases were considered locally operable at the time of examination—an operability of 56 per cent. One was questionable. It is interesting to note that eight of the fourteen cases with symptoms of from six to twelve months' duration were operable; five of the fifteen cases of more than twelve months' standing were still operable; one case with symptoms of less than three months was inoperable at the time of examination. Five of the eight private cases were operable, although in two of these there had been symptoms of more than eighteen months' duration. All cases in which the tumor and its surrounding zone of infiltration were not fixed to the bony pelvis or in which there was no apparent involvement of prostate, bladder, or uterus and adnexa, were regarded as operable.

Thirteen of the clinic patients accepted radical operation. Two of these died of shock in the hospital—one of these an extremely emaciated patient. Of the five private patients, one died of prolonged sepsis following radical operation with attempted restoration of the anus; one died two years after operation, of general abdominal metastasis; three are alive and clinically well at ten years, three years four months, and two years three months. Of the clinic patients surviving operation, three were untraceable after discharge from the hospital; of the remainder, two definitely died of recurrence after eighteen months; one died after three years; another two years following operation—cause of death not stated. One was reported well two years following operation; one is well twenty-seven months after operation; one is alive after three years. To sum up the operative results, we find that of eighteen patients operated on with the hope of cure, five, or 27 per cent., are known to be alive.

Five different surgeons operated in the eighteen operable cases. There were two different types of operation: block removal of anus and rectum with perirectal tissue, with or without preliminary laparotomy in seven cases, four of these patients being alive: preservation of sphincters with reconstruction of continuity of bowel in seven cases, one of these patients being alive. In four cases the type of operation is not described; one of these patients is alive and well two years following operation; ultimate fate, unknown.

In a discussion of operative technic, only major points can be touched on in this article. The first principle is to mutilate the patient as little as is commensurate with the best possible eradication of the disease. An abdominal exploration to determine the extension of the disease and possible metastasis should be done in every case. A recent study by McVay [1] showed that metastasis to lymph glands was comparatively much more frequent in the smaller ulcerating growths than in the large, proliferating type. At the time of abdominal exploration, not only the extent of the disease but also the best type of operation for its eradication can finally be decided on and a colostomy performed. I believe that very rarely it is justifiable to attempt to preserve the sphincter ani muscles and to anastomose the oral end of the resected sigmoid to the anal canal.

Among the cases collected for this study there was one from the Barnard Free Skin and Cancer Hospital in which the patient, operated on by Dr. W. E. Leighton in July, 1921, successfully survived a resection for rectosigmoidal carcinoma with anastomosis of the sigmoid to the anal canal and preservation of the sphincter ani function. My objection to this type of operation is twofold: The operative mortality on account of shock and sepsis is greater than in other operations, and local recurrence is more frequent (two cases in this series with local recurrence). It is readily admitted that more tissue which may be invaded by cancer can be removed if the coccyx is excised (and lower sacral segments if necessary), and the sphincter ani muscles are sacrificed. Also, the operation can be performed more quickly and with less danger of sepsis than if any sort of anastomosis is attempted. Hence the sole reason for doing the less radical operation is to avoid an artificial anus.

COLOSTOMY

We hear a great deal about the discomforts of colostomy, and there are many ingenious methods advocated for control of feces when the colon is brought out to open on the skin of the abdomen. I believe that if we could be assured that the patient would have adequate control, none of us would ever try to reestablish the continuity of the rectum with the anal canal except in the most favorable high lying growths. Therefore, it is of the utmost importance that the question of colostomy be given careful consideration. In my opinion, it makes very little difference what method is utilized to bring the oral end of the opened intestine through the abdominal wall. I do believe that if the nerve supply of the abdominal muscles has not been injured it is advisable to bring the intestine out between muscle fibers and not through fascial lines such as the linea alba or the linea semilunaris. In carcinoma of the rectum, the sigmoid can always be utilized for the artificial anus, and I am firmly convinced that the greatest factor in favor of control of feces is a sufficiently long loop of sigmoid with the stoma as near the level of the umbilicus as the length of the sigmoid will permit. I have had no complaint from my own rectal carcinoma cases because of incontinence. A bank cashier on whom only a palliative operation was performed was able to resume his position in the bank for twelve months before he died of metastasis. One active woman of 58 resumed her normal activities in the small town in which she lived, and visited her son and daughter-in-law in Chicago on at least one occasion. A third patient, a clerk during the Democratic administration in Jefferson City, held his position until the next election and now resides in comfort in a southern resort. In one of the cases included in those collected for this article, the patient was operated on by Dr. Willard Bartlett in 1913. She weighed 250 pounds (113 kg.) at the time of operation. Under spinal anesthesia a Kraske operation was performed, the oral end of the sigmoid being brought out at the extreme upper angle of the wound. This patient reported for

1. McVay, J. R.: Ann. Surg. 76:755 (Dec.) 1922.

observation on the tenth anniversary of the operation, weighed 260 pounds (118 kg.), and stated that she had no trouble whatsoever with the sacral anus. I believe the good result in this case can be ascribed to a very long looped sigmoid in which the feces collect and give the patient warning that a bowel movement is imminent. These four cases are cited in more or less detail to show that an artificial anus need not necessarily make a patient's remaining life one of isolation from his fellow men.

RADIUM

In the present state of our incomplete knowledge of the action of radium, and undeveloped technic in its application to rectal carcinoma, it is difficult to estimate the value of radium as a therapeutic agent. We have had to feel our way cautiously because it was discovered early that the normal rectal mucosa was very sensitive to radium, and patients were made more miserable by its use without deriving appreciable benefit. Since most rectal carcinomas may be placed in the adenocarcinoma group, we know that to be destroyed they must receive a large dose of beta radiation and gamma radiation. The problem has been to deliver a sufficiently large dose to all portions of the growth without doing irreparable damage to normal mucosa. So far this problem has not been adequately solved, though Quick [2] has written hopefully that, by the use of emanation seeds implanted in the substance of the growth with lightly screened applicators within the lumen of the bowel, and with 20,000 or more milligram hours applied over the sacrum, radiation may surpass the results obtained by surgery. As an adjunct to surgery, I believe that radium has a field of real usefulness. After colostomy and with the rectum removed, any desired dosage may be given to areas in the wound where recurrence might be expected. If there is perirectal infiltration in any direction, or if there is reason to believe that not all the carcinoma has been completely removed, large doses of radium should be given in the wound. In this way, I feel convinced, the number of local recurrences will be diminished.

INOPERABLE CASES

What can be done for the plainly inoperable cases? Cases which show liver metastasis or metastasis to the retroperitoneal glands, unless they present symptoms of obstruction which demand relief, should not be treated by operation or radiotherapy. Colostomy alone should be performed for distressing obstruction. Occasionally, however, a great deal can be done for an apparently hopeless condition. In the case of the bank cashier, for instance, who came to us a pitiable object of skin and bones, with multiple ischiorectal fistulas discharging through a mass of cancer in both ischiorectal fossae, a colostomy was done; then a week later both ischiorectal fossae, with as much of the rectum as could be reached, were cleaned out with the soldering iron and afterward large doses of radium were given. This patient was enabled to return to his former occupation for a full year; he died of liver metastasis in the belief that his "cancer" had been successfully removed.

SUMMARY

While the records of the clinic cases are admittedly incomplete and the elapsed time since operation of the patients still alive is admittedly short, yet certain deductions appear justifiable. In at least 33 per cent. of the cases in this series, correct treatment could have been advised earlier had physicians made a digital rectal examination. A patient who complains of diarrhea and blood in the stools, or any rectal discomfort or distress, should not be dismissed without at least a palpation of the inside of the rectum as high as the finger can reach. In 30 per cent. of the cases, earlier correct treatment might have been given if the patients had realized that their apparently trivial symptoms might be due to cancer and had consulted a physician earlier. In 63 per cent. of the cases in this series the patients might have had earlier correct treatment; and if it is true that "in the early recognition and prompt treatment of cancer lies the greatest hope of cure," then, surely, in this community at least, there is much educational work to be done among both the laity and the profession. Furthermore, we must not consider the number of patients who survive any given number of years, be it three, five or twenty, as the sole criterion of the value of any operation for cancer. Until the underlying cause of cancer is discovered and a method for the elimination of this cause is discovered, we must hold the view that "once a cancer patient, always a cancer patient." Viewed in this light, any operation or other procedure that relieves suffering or prolongs a useful life is of value, and certainly my observations of the results obtained by operation alone or operation combined with radium in the cases here summarized leads me to the conclusion that operation for cancer of the rectum, even in advanced cases, should be considered not a method of last resort which leaves the patient in a state little, if any, better than death itself, but a hopeful procedure with the possibility of indefinite prolongation of useful life.

400 Metropolitan Building.

2. Quick, Douglas: Am. J. Roentgenol. 8: 746, 1921.

SYPHILIS AS A FACTOR IN THE ETIOLOGY OF MENTAL DEFICIENCY *

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There are few problems in medicine concerning which more widely divergent views are expressed than those in regard to the rôle of syphilis in the etiology of mental deficiency. Thus, Key and Pijper,[1] in 1922, reported an incidence of 55.2 per cent. positive Wassermann reactions in 217 cases of amentia, at the same time, however, stressing the opinion that syphilis alone cannot be responsible for the amentia in all of these cases. Atwood [2] is quoted as stating that 14 per cent. of the mental defectives at the New York City Children's Hospital are syphilitic on the basis of Wassermann tests. We have been unable to trace the source of Atwood's information, but we note that he must have changed his opinion; for, in a more recent contribution,[3] he asserts that syphilis is an uncommon

* Read before the Interhospital Meeting, Ward's Island, June 6, 1923.

1. Key, G. J., and Pijper, A.: Syphilis and Mental Deficiency: An Investigation of 217 Cases, Am. J. Syph. 7: 203, 1923.
2. Atwood, quoted by Jelliffe and White: Nervous and Mental Diseases, Philadelphia, Lea & Febiger.
3. Atwood, C. E., and Clark, L. P.: A Contribution to the Etiology of Feeblemindedness, with Special Reference to Prenatal Enamel Defects, New York M. J. 115: 573 (May 17) 1922.

cause of mental deficiency. E. Livingston Hunt [4] states that: "Mental defectiveness and deficiency are common in syphilitic children. . . . A great many instances of backward children, defectives, mild and severe imbecility and even idiocy are the result of syphilis. . . . Finally, there occur certain types of mental defect in children of syphilitic parents, who, however, show no obvious syphilitic lesions. Whether or not, however, these children may not later develop either definite syphilitic lesions or respond to Wassermann tests in either blood or spinal fluid is still a question."

Goddard reports an incidence of 9 per cent. of syphilis in a thoroughly studied series of cases, but adds, "That the number should be much greater than this there is no doubt." This does not seem to deter him from concluding that "one cannot help having the feeling that if syphilis is a cause of feeblemindedness, it certainly is not a very potent one; . . . if it ever produces feeblemindedness, it does so only under most favorable conditions. What these conditions are cannot be shown until we have much more careful studies."

Haines and Partlow,[5] after investigating syphilis and feeblemindedness in Alabama state industrial schools, on the basis of serum reactions and clinical and psychologic examinations, concluded that their study "gives no evidence of a high rate of incidence of syphilis amongst the mentally inferior."

We have had the opportunity to discuss with numerous general practitioners and neurologists their beliefs concerning the interrelationship between mental deficiency and syphilis. The lowest estimate given in our recollection placed the incidence of syphilis at 20 per cent. Many were of the opinion that "more than half" of all mental defectives were syphilitic. How far from correct these estimates are will become manifest in the course of this paper.

If syphilis is a factor in the etiology of mental deficiency, its modus operandi, according to the exponents of its claim to significance, must be one or the other or both of the following:

1. When present in the mentally normal antecedents of the mental defective, syphilis causes some alteration in the germ plasma which leads to amentia in the latter.
2. Fetal infection leads to pathologic processes in the developing brain, which, per se, are the cause of the amentia.

This paper will not concern itself with the rôle of ancestral syphilis in the causation of mental deficiency. Up to the present, at any rate, sufficient evidence for the proper evaluation of the significance of syphilis in the antecedents of mental defectives has not been forthcoming. Unfortunately, it is a question that does not lend itself as easily to scientific inquiry as to philosophic speculation. Early in the course of our work, in connection with another study, a conscientious effort was made to perform routine Wassermann tests on the parents of an unselected series of patients; but so many difficulties were encountered that the attempt had to be abandoned before sufficient data for conclusions could be obtained.

PURPOSE

Our purpose at the outset of this investigation was to determine what percentage of our admissions were syphilitic as judged by the Wassermann reaction and clinical examinations.

At the New York City Children's Hospital, where this study was made, the patients represent as unselected a class of mental defectives as can be found at any one institution. This does not mean that the cases are entirely unselected, because, as Moorrees and Poull [6] have shown, only the lower and middle classes are likely to send their children to a public institution for mental defectives. The richer children usually are cared for at their homes or at private institutions for the mentally deficient. There is, however, no reason to believe that investigation of an even less selected group of cases than ours would yield quantitatively different results.

In the course of our work, numerous questions presented themselves. In the first place, the reliability of the serologic test as an index to the presence or absence of syphilis has frequently been questioned. Ever increasing experience in all branches of medicine has, however, tended to convince most clinicians that, although the positive Wassermann reaction is only one sign of syphilis, it is probably the most dependable one. Unfortunately, the converse of this statement does not hold so true; i. e., a negative Wassermann reaction does not exclude the possibility of infection. In this connection, however, it may be interesting to note that Jeans [7] of St. Louis has shown that in practically 100 per cent. of active cases of hereditary syphilis the Wassermann test is positive, and recent work by other investigators in this field has tended to substantiate this statement. This would tend to minimize, although it cannot possibly eradicate, the margin of error in drawing deductions as to the frequency of syphilis in mentally defective children on the basis of serologic tests.

METHODS OF INVESTIGATION

Two methods of investigation were followed, serologic and clinical.

Routine Wassermann tests were performed on all admissions from whom blood was obtainable. We were successful in obtaining blood in 95 per cent. of the children. The blood was allowed to remain clotted for an hour; the clot was then rimmed with a fine glass rod and allowed to remain on ice in contact with the clot for from twenty-four to forty-eight hours. The serum was pipetted off and inactivated in a water bath at 56 C. for fifteen minutes, as recommended by Kolmer. The anti-sheep hemolytic system was used. A preliminary titration of complement was always carried out. Three antigens were used, plain guinea-pig heart and cholesterinized human and guinea-pig heart. Antigens were titrated at frequent intervals. Two units of amboceptor and two of complement were used in the tests. Incubation was with a water bath for one hour. Each series of tests was controlled by antigen, complement, saline, positive and negative controls. The Citron method of reading was followed.

The clinical side of the study consisted of a careful search in addition to the routine admission examination, for stigmas of syphilis. Seven hundred and seventy-seven cases were examined for evidences of old or recent keratitis, periostitis, hutchinsonian teeth, rhagades, nasal deformity, and epitrochlear adenopathy. In addition, any other signs suggestive of congenital or acquired syphilis were noted.

4. Hunt, E. L.: Syphilis of the Nervous System in Children, Am. J. Syph. **5**: 259 (April) 1921.
5. Haines, T. H., and Partlow, W. D.: Syphilis and Feebleminded-ness in Alabama State Industrial Schools, Am. J. Syph. **5**: 336, 1921.
6. Moorrees, V., and Poull, L. E.: The Immediate Heredity of Primary Aments Committed to a Public Institution, Department of Public Welfare, New York City, to be published.
7. Jeans, P. C.: Clinical Signs and Diagnosis of Late Hereditary Syphilis, Am. J. Dis. Child. **12**: 374 (Oct.) 1916.

ANALYSIS OF RESULTS

One thousand, seven hundred and ninety-four serums from 1,633 patients were tested. Of these, forty-one, or 2.5 per cent., were positive, and forty-four, or 2.7 per cent., were doubtful. If every case presenting from one to four plus reactions on the cholesterinized antigens (so-called doubtful reactions) is considered a case of syphilis, the total incidence of syphilis based on the Wassermann reactions would be 5.2 per cent. In accordance with the Citron method of reading, we have considered as positive only those serums which showed fixation with alcoholic as well as with cholesterinized antigen.

One hundred and twenty, or 15.5 per cent., of the cases examined clinically presented at least one of the so-called stigmas. Of the 120, only thirteen presented more than one so-called stigma, and 107 only one. Of the 107 that presented only one stigma, in eighty-five it was unilateral or bilateral epitrochlear enlargement. In other words, in the 120 cases in which a suspicion as to the presence of syphilis could be raised on the basis of clinical examination, in almost 71 per cent. of the cases the only finding was epitrochlear adenopathy, either unilateral or bilateral. In only one patient did the classical picture of late hereditary syphilis, hutchinsonian teeth, saddle-back nose, rhagades and evidences of past interstitial keratitis present itself.

COMMENT

It was our purpose at the outset to determine the frequency of syphilis in mental defectives. On the basis of our serologic results, less than 3 per cent. of our defectives were definitely syphilitic. Clinical examinations for the stigmas of syphilis revealed 15.5 per cent. of our patients with one or more of the so-called stigmas.

We have, however, shown that the great majority of patients falling into this suspicious group present only one finding, and this finding in more than 70 per cent. of the suspects is unilateral or bilateral epitrochlear enlargement. The folly of branding every patient with epitrochlear adenopathy, in the absence of other findings, as syphilitic is too obvious to merit discussion. That the actual incidence of syphilis at our institution is more nearly that arrived at by serologic than by clinical examination there is not the slightest reason to doubt. If it is conceded that only one half of all cases

TABLE 1.—*Serologic Results*

Number of patients tested	1,633
Total number of tests	1,794
Positive serums	41
Percentage positive	2.5
Doubtful serums	44
Percentage doubtful	2.7
Positive and doubtful serums	85
Percentage of positive and doubtful serums	5.2

of congenital syphilis manifest themselves by a positive serum reaction, even then the incidence of syphilis in our series would be only approximately 5 per cent.

This brings us to the point of major interest. The incidence of syphilis at our institution falls within, if it does not actually fall below, the incidence of syphilis in the general population. Thus, Symmers [8] gave his estimate at 6.5 per cent. of all hospital admissions. Vedder has shown that 20 per cent. of the males in Germany are infected. Fournier estimated that in France 15 per cent. of the adult population is syphilitic. Hazen states that from 10 to 20 per cent. of all hospital cases in this country show a positive Wassermann reaction. Hala reports an incidence of 13.8 per cent. positive Wassermann reactions in the admissions to the Kings County Hospital, a sister institution in the Department of Public Welfare of New York City. Dr. Bacon, superintendent of the City Hospital, another

TABLE 2.—*Incidence of Individual Clinical "Stigmas"*

Examined for "stigmas"	777
Presenting one or more stigmas	120
Bilateral epitrochlear adenopathy	34
Right epitrochlear adenopathy	28
Left epitrochlear adenopathy	23
Nasal deformity	7
Notched incisors	7
Saber-like tibias	7
Pupillary irregularity or fixity	22
Cutaneous scars	1
Rhagades	1
Corneal opacities	15

sister institution in the department of public welfare, in a personal communication to one of us (W.) states that the incidence of positive Wassermann reactions in the new-born, taken as a routine, at his institution for the year 1922 and the first three months of 1923, was nine in 428, or 2.1 per cent.

CONCLUSION

It has become increasingly evident to us not only that syphilis is uncommon in mental defectives but also that it is less common than in the general population, and is comparable in frequency only with congenital syphilis at any lying-in or child-caring institution. Our studies, moreover, have led us to question whether there is any etiologic relationship whatsoever between syphilis and mental deficiency. If syphilis is a cause of mental deficiency, it should occur far more frequently in mentally deficient than in mentally normal children; the evidence adduced in this study controverts such an assumption.

The feeling has grown on us more and more that there is no such abnormal mental state as "syphilitic amentia." It seems more than probable that syphilis is an incidental finding in mental defectives; if it bears any relationship to abnormal mental states in children, it is recognizable as frank juvenile general paralysis or tabes. These conditions are not common; they are not, strictly speaking, amentias, but dementias, and they usually are not, or at least should not be, confused with primary amentia.

8. Symmers, Douglas: Anatomic Lesions in Late Acquired Syphilis, J. A. M. A. **66**: 1457 (May 6) 1916.

Problem of Sterility in Siam.—Sterility is a more serious complication in Siam than in some other Eastern countries, China for example, with her hundreds of millions in population. Siam has a population of between eight and nine millions, but could support more than twice that number. Any disease that lessens the birth rate in a country having a high death rate, with the capacity to take care of double its population, would be given most serious consideration with a view to its immediate control. Sterility in itself is certainly not a serious complication in greatly overpopulated and starving countries, but in a country like Siam, underpopulated, wonderfully productive, and containing vast undeveloped resources, it constitutes a danger to the welfare of the state that cannot be estimated.—R. W. Mendelson: *Am. J. Pub. Health* **13**:830 (Oct.) 1923.

VASOMOTOR RHINITIS *

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During recent years, clinicians have investigated extensively the causative factors in vasomotor rhinitis, more particularly the seasonal vasomotor rhinitis or so-called hay-fever. There is, however, a group of cases in which this type of symptoms continues throughout the year, without a definite seasonal activity.

I shall review here the clinical course and the reactions to treatment in 100 cases of vasomotor rhinitis observed at the Mayo Clinic during the last two years. The cases were grouped for study according to the methods of previous observers. Particular attention was directed to the so-called reflex type of case, in which no protein sensitization factors were demonstrable. The negative skin sensitization tests in these cases do not prove that such factors are absent. There were sixty-one cases in this group; the remaining thirty-nine in which the skin reactions were positive were classified with the protein sensitization group.

Incidence of Protein Sensitization in Cases of Vasomotor Rhinitis

Decade	Cases	Males	Females	Positive	Negative	Foods	Foods and Bacteria	Animal Emanations	Animal Emanations and Bacteria	Bacteria	Pollens and Bacteria	Pollens	Foods and Animal Emanations	Pollens and Animal Emanations
1 to 10	5	2	3	4	1	1	1	1	1	..	..	..	..	..
11 to 20	13	2	11	5	6	3	..	1	..	..	..	1	..	..
21 to 30	31	10	21	14	13	5	3	..	..	3	..	2	1	..
31 to 40	23	8	15	9	9	2	1	..	..	1	1	3	..	1
41 to 50	18	3	15	5	8	..	1	..	..	3	..	1	..	..
51 to 60	9	3	6	2	2	..	..	..	..	1	..	1	..	..
61 to 70	1	1	..	..	1	..	..	..	..	..	..	..	..	..
Total	100	29	71	39	40	11	6	2	1	8	1	8	1	1

ETIOLOGY

In studying the cause of vasomotor rhinitis, there must be taken into consideration factors such as (1) age and sex, (2) occupation, (3) climate, (4) irritation of the nasal mucous membrane, (5) protein sensitization, (6) local conditions, and (7) general conditions.

Age seems to be a factor of minor importance; persons in the second, third, fourth and fifth decades are generally affected. Females seem to be much more commonly affected. In the 100 cases, 71 per cent. were females and 29 per cent. males.

Only in specific instances is occupation a factor. Bakers and housewives who were sensitive to wheat flour noted that a definite paroxysm of symptoms was produced by handling flour. Obviously, dust of any sort is a source of irritation to the nasal mucous membrane. Virtually all of the women were housewives, and in many instances appeared to be definitely affected by the dust of sweeping or cleaning.

Persons living in a cold, changeable climate seem to be more seriously affected than those living in a warm, uniform climate. The former seem to be worse during the winter, particularly after being exposed to cold air, or when the weather is cloudy and rainy. Improvement or complete relief is sometimes effected by a change to the proper climate. Climatic factors have also been noted in cases of hypertrophic rhinitis. Most of the patients in the series lived in Minnesota, Iowa, Wisconsin, Illinois, Michigan, Manitoba, and North and South Dakota. However, patients living in almost all localities of the United States were observed.

Dust, cold air, strong odors, smoke, face powder, particularly rice powder, wind or any substance that may irritate the nasal mucous membrane precipitates paroxysmal attacks of vasomotor rhinitis. A cold draft on the external surface of the body probably irritates a mechanism of capillary contraction, and, as reaction ensues, the dilatation of the peripheral vessels in the nose releases the nervous impulse in some way. This also may be brought about by overheating, the mechanism in this instance being the opposite.

Since the discovery of the chemical processes of anaphylaxis and allergy, a new field of speculative thought has culminated in the theory that vasomotor rhinitis, as well as bronchial asthma, is due in some measure to the action of foreign protein introduced into the blood stream. I shall not discuss protein sensitization in detail; however, there is very little doubt concerning the relationship of sensitization to the protein content of pollens in hay-fever. The symptoms produced by sensitiveness to the proteins of animal emanations, foods and bacteria, may also be explained on the basis of their toxic influences. The tests for protein sensitization in the 100 cases were carried out in the clinic in the laboratories of clinical pathology. The technic and proteins used were identical with those described by Sanford.[1] The results are given in the accompanying table. Some of the patients reacted to two types of protein, particularly foods and bacteria, but none to more than two. Patients with the perennial type of hay-fever reacted to pollen. Their symptoms were somewhat worse in the summer, but were present throughout the year.

No local intranasal condition can be considered the sole cause of vasomotor rhinitis, but the presence of nasal obstruction, from deformities of the septum, nasal polypi, and so forth, is considered an important contributing factor.

The common coincidence of vasomotor rhinitis and neurosis is an indication that neurosis is an important factor in the rhinitis. Overwork, migraine, fatigue and worry are associated with the neurosis in most cases. The general health of many of these patients was below average. Constipation and secondary anemia were common. Two patients were pregnant, which probably had a definite influence on the vascular stability of the nose, but, undoubtedly, was only a manifestation of the general coincident change in the vascular system. One of the patients was definitely worse, and the other completely relieved of symptoms.

* Abridgement of thesis submitted to the Faculty of the Graduate School of the University of Minnesota in partial fulfilment of the requirements for the degree of Master of Science in Otolaryngology, April, 1923.

1. Sanford, A. H.: Protein Sensitization in Asthma and Hay Fever, Minnesota Med. 3: 174-180 (April) 1920; Hypersensitivity to Food Proteins, M. Clin. N. Am. 5: 535-548 (Sept.) 1921.

SYMPTOMS

The symptoms varied considerably. It may readily be perceived that climate, occupation, environment, the inhalation of foreign substances, protein sensitization, local conditions of the nose, and general conditions in many combinations may account for the diversity in symptoms. The duration of symptoms was so variable that a definite average could not be computed. The shortest were only a few months, and the longest, from childhood to the age of 60 years. In children of from 1 to 10 years, symptoms are most commonly noticed by the parents between the ages of 3 and 6. A large percentage of patients had suffered for many years before attempting to obtain medical relief. Sneezing, nasal obstruction and nasal discharge may be considered cardinal symptoms. The patient may complain of only one symptom, but all are present, and any one may predominate.

Sneezing is usually paroxysmal in onset, particularly when inhaled irritating substances come in contact with the nasal mucosa. The attacks usually occur when the patient arises in the morning. In the mild forms this may be the only attack during the day; in the severe forms it may come on at any time without any discernible cause.

Nasal obstruction may be unilateral or bilateral, but is always intermittent. It may come and go in a few minutes, or it may be constant. In almost all normal noses, however, there is a certain amount of obstruction on one side or the other. During sleep the dependent side of the nose has a tendency to become obstructed.

The nasal discharge may be profuse and watery, or mucoid, varying from thin to thick mucus. In many instances it comes on immediately after the sneezing. The amount is usually estimated by the number of handkerchiefs that may be used in a day. The discharge is sometimes very irritating to the vestibule of the nose and upper lip, and areas may become excoriated. The patient may complain of postnasal more than anterior discharge, and of tickling in the throat and constant hacking.

Besides sneezing, nasal discharge and nasal obstruction, other symptoms are closely associated with vasomotor rhinitis. If obstruction is marked, the nasolacrimal duct may be blocked, or the lacrimation may be purely reflex. Mild conjunctivitis not uncommonly accompanies the lacrimation. Headache and pain over the sinuses often occur. Blocking of the ostia of the sinuses and absorption of the air content undoubtedly give rise to the vacuum type of headache. Many of the neurotic patients are subject to attacks of migraine. The sphenopalatine type of headache may be present. Periodic deafness is sometimes caused by blocking of the eustachian tube. If the nose is blown violently and improperly, the middle ear may be inflated with air or the tube closed with mucus. Patients should be instructed to blow the nose easily, and to leave both sides open. Loss of the sense of smell depends to a great extent on the pathologic conditions in the nose. Cough may be productive or nonproductive, and often accompanies asthma. Asthma, varying from mild to the most severe forms, was present in about 20 per cent. of the patients.

PATHOLOGY

The mucous membrane of the nose in cases of vasomotor rhinitis may present the appearance of all the changes in marked polypoid hyperplasia and secondary atrophy. Usually the membrane is pale or grayish pink, full, soft, boggy, and covered with a thin, watery secretion, having a tendency to accumulate on the floor of the nose. The fulness of the membrane determines largely the amount of obstruction present; this may be modified by the general conformities of the turbinates and septum. The middle turbinates are especially susceptible to polypoid degeneration, which may vary in its extent. There may be only a thin layer of polypoid tissue, or the nose may be almost filled with polypi. Polypoid changes may progress to the formation of definite polypi, or regress to secondary atrophy of the mucous membrane, the latter condition occurring more often in cases of long duration.

Sinusitis.—If nasal sinus infection is suspected, roentgenograms should be made. In many instances it is difficult to decide when an investigation of the sinuses is indicated; the rhinologist must decide this on the basis of the symptoms and signs, as well as the roentgenographic findings. The use of shrinkage and suction is a definite diagnostic measure.

Roentgenograms were made in fifty-four of the 100 cases; thirty-seven were negative and seventeen were positive. The cloudiness of the positive plates varied from 1 to 3, and was present on one or both sides; it was limited mostly to the maxillary region, but was occasionally noted in the frontal sinuses. All of these cases were clinically negative for sinus infection. Repeated observations, with the use of shrinkage and suction, were carried out. In three cases the findings were negative, and in eight positive cases, roentgenograms of the sinuses, and antrum punctures were negative so far as sinus infection was concerned. In several instances a small amount of mucus, similar to that in the nose, was washed out by irrigation. The boggy, swollen condition of the mucous membrane of the nose and sinuses, as well as a thickening of the bone, would account for the positive roentgenographic findings in these cases.

TREATMENT

The treatment of vasomotor rhinitis should be directed to local, as well as to general measures; it may be classified in the following order:

1. *Intranasal Applications.*—In the reflex type of disease, the local treatment may afford definite relief. Local applications were made to the region of the sphenopalatine ganglion in most of the cases. Silver nitrate in concentrations of from 12 to 50 per cent., preceded by 10 per cent. procain solution, was applied with a cotton applicator, and permitted to remain in position about five minutes with the 12 per cent. solution, and from five to ten seconds with the 50 per cent. solution. Within a few hours a paroxysm of sneezing, lacrimation, watery discharge and nasal obstruction occurred, which lasted for from two to twenty-four hours. Immediately after the subsidence of the attack, the results of the treatment were noted. It was found that about 50 per cent. of the patients were markedly or completely relieved; the remainder were only slightly relieved or their condition was unchanged. The strength and number of applications were regulated by the symptoms in individual cases. Patients should be kept under observation for some time. Five per cent. phenol (carbolic acid) in liquid petrolatum was used as a mild application in certain cases, with good results. The patient must be instructed how to drop the oil into the nose, so it may reach the region of the sphenopalatine ganglion.

The results following the intranasal applications have been very satisfactory, and superior to those obtained

by other forms of treatment. A definite statement cannot be made at present with regard to the length of time the patient will be relieved, nor has a classification of the cases been made with regard to the interval of relief. Most of the patients had received other forms of treatment elsewhere without benefit. The patients were usually willing to return for subsequent treatments, if necessary. The same treatment was applied in the protein sensitization type of vasomotor rhinitis, with about the same results.

2. *Intranasal Operations.*—Surgical intervention was not instituted in any of the cases. Operative procedures in the nose of a patient with vasomotor rhinitis should be undertaken with a great deal of caution, as very little relief may be afforded. The radical removal of the turbinates should be especially avoided. The removal of obstruction, such as that caused by polypi, enlarged posterior tips of turbinates, and deflections of the septum, is justifiable and may greatly relieve the patient. However, the prognosis should be guarded.

3. *Removal of Sensitization Factors.*—Every effort should be made to remove sensitization factors. If the patient is sensitive to certain foods, these should be eliminated from the diet, and a form of desensitization, as carried out by Sanford, employed. Vaccines should be tried if bacteria are the cause. Sources of animal emanations should be eliminated. The desensitization treatment may be carried out, or change of climate suggested if pollen is the cause.

4. *Change of Climate.*—In the reflex as well as the sensitization type of vasomotor rhinitis, a great deal of improvement may be obtained by a change of climate. The warmer climates seem to be the more satisfactory, but the type of climate is not necessarily important. Certain patients may not experience relief from change of climate.

5. *General Conditions.*—All etiologic factors should be taken into consideration. Change of occupation and the avoidance of all sources of external irritation to the nasal mucous membrane should be carried out when indicated. The treatment of pathologic conditions in general, such as secondary anemia, metabolic disturbances, high or low blood pressure, and constipation, must not be neglected. Neurosis is a difficult problem, but some effort should be made to eliminate the possible causes of the condition. A complete change of living environment and habits may be necessary. Only one case of hypothyroidism was noted in the series. The patient had a metabolic rate of —21. She received some temporary relief by the local application of silver nitrate to the sphenopalatine ganglion, but did not improve after the administration of thyroxin. The removal of foci of infection, such as infected teeth and tonsils, should be carried out as a general measure. It may have no direct influence on the improvement of the vasomotor rhinitis, but may help greatly the general condition of the patient.

SUMMARY

Vasomotor rhinitis may be divided into two distinct types: the reflex, in which no definite protein sensitization factors can be demonstrated, and the protein sensitization, in which there is sensitization to the proteins of foods, bacteria, animal emanations, and pollens.

In the reflex type are many contributing factors, other than the local pathologic conditions in the nose, such as age, sex, occupation, climate, temperament and environment. General systemic functional or pathologic conditions play important parts. The cardinal symptoms of the reflex type are sneezing, nasal discharge, and nasal obstruction, with little relation to seasons. Closely associated symptoms are lacrimation, headache, periodic deafness, asthma and bronchitis. All of the symptoms may vary.

In the protein sensitization type, anaphylaxis and allergy may be considered the important factors, but usually there are other causes more or less important.

The nervous mechanism is the same in all cases, and a thorough knowledge of it is essential in the explanation of the nasal symptoms.

The pathologic condition is essentially uniform; namely, pale, swollen, boggy, nasal mucous membrane with polypoid degeneration, or polypoid hyperplasia. Definite sinus infection is rare. The cloudiness of sinuses in the roentgenogram is usually caused by the swollen condition of the mucous membrane and a thickening of the bony lining. Such infection should always be ascertained, or ruled out by the usual diagnostic procedures.

The treatment consists in the removal of all possible causes, and local applications to the sphenopalatine ganglion. In the reflex type of case the latter is the treatment of choice. Satisfactory and gratifying results, from the standpoint of both the patient and the physician, have been obtained by the use of silver nitrate in concentrations of from 12 to 50 per cent. The same method of treatment is applicable to the protein sensitization types. Operative procedures should be carried out judiciously. The relief of anatomic nasal obstruction adds a great deal to the restoration of the respiratory function of the nose, and to the relief of symptoms of physiologic obstruction. Change of climate may afford a great deal of relief, and should be tried in certain selected cases, especially if other forms of treatment have not been successful.

ABNORMALITIES OF THE VISUAL FIELDS *

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Our object in this paper is to discuss methods of examination of the visual fields, to emphasize the value of graphic records, and to stimulate neurologic interest in an ophthalmologic field, as well as to present in outline certain clinical cases.

Knowledge of the physiology of vision and its relation to the anatomy of visual pathways has been established on a sound and eminently practical basis. Lesions interrupting different parts of the visual tracts can frequently be localized with almost mathematical accuracy. This can be accomplished, however, only by means of accurate observations, which in turn depend on the use of methods of precision.

Notwithstanding the immense value of visual field examination as an aid to neurologic diagnosis, careful routine work in this line is being done only by a few enthusiasts. In theory, the charting of the visual field is relatively simple, but in clinical practice many difficulties are met, and there are numerous sources of possible error. The more important sources of difficulty and error include: (1) faulty fixation; (2) the

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lack of alert attention on the part of the patient; (3) incomplete visual defects, such as relative scotomas; (4) low visual function in the periphery of the fields; (5) fatigue—physical, mental or ocular; (6) psychoneurosis; (7) inaccurate technic; (8) faulty illumination, and (9) refractive errors. It is also true that a certain confusion of results has arisen from the variation of methods used. Many forms of apparatus have been devised to facilitate examination, none of which have been entirely satisfactory.

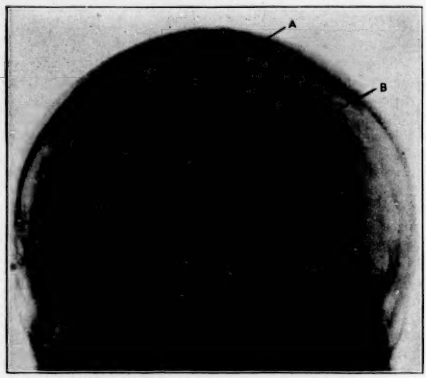

Fig. 1 (Case 2).—*A*, flattened bullet under scalp; *B*, point of impact.

In the evolution of methods of precision for examination of the visual fields, two types of apparatus have been developed; namely, the arc perimeter and the tangent screen. The practical advantages and disadvantages of each may be briefly summarized. The advantages of the perimeter are that (1) the complete extent of normal fields can be tested; (2) the test object is always the same distance from the eye; (3) the size of the units of measurement in all parts of the fields is uniform, and (4) the apparatus is compact and portable. The disadvantages are that (1) the charting of small and irregular defects, especially in the central areas, is difficult; (2) excessive time is consumed in examinations, with resulting fatigue to patient and examiner; (3) there is monocular fixation, and (4) there is a small-scale record. The advantages of the screen are that (1) charting all defects within 40 degrees of the fixation point can be done with facility and accuracy; (2) there is lessening of the time consumed and of the corresponding fatigue; (3) there is binocular fixation, and (4) there is a large-scale record. The disadvantages are that (1) it is not applicable for examination of the extremes of the peripheral field; (2) it is cumbersome, and (3) there is varying size to a degree of the visual angle as projected on different parts of the tangent screen.

Different modifications of apparatus and variations in methods of examination have been tried by many workers. An important modification of the screen, called a stereocampimeter, was devised by Lloyd. This employs a small screen and the utilization of a new principle, that of binocular fixation. A partition separates the two fields of vision, and a combination of prisms and magnifying lenses familiar in the common stereoscope secures the binocular fusion of two fixation points on the screen. This apparatus had the advantage of holding the attention and securing better fixation, but it is serviceable for only a relatively small portion of the visual fields. The recording is visible to the patient during the examination, and, to obtain a permanent chart, the record must be transferred later from the slate to a chart.

From our observations in the use of various types of apparatus, we are convinced that accuracy depends largely on five fundamental requirements: (1) the maintenance of binocular fixation; (2) the practical elimination of fatigue; (3) uniform illumination; (4) a large field for the recording of observations, and (5) invisibility of the record to the patient during examination. In addition to these requirements, it is desirable that the apparatus be portable, and that permanent records be secured quickly and easily.

Believing it possible to combine many of the good principles in a single apparatus, we have been led to devise a screen which we are now using, and hope to improve.

The curtain of the screen is made of gray cotton cloth measuring 120 by 180 cm., mounted on a take-down frame or stand by eyelets slipping over projecting screw heads so that it can be quickly attached and removed. A fresh screen is used for each examination. A vertical triangular partition, perpendicular to the screen, separates the fields of the two eyes. A chin rest steadies the head of the patient, with the eyes 55 cm. from the center of the screen and the glabella touching the partition. Two fixation points are attached to the screen, 5 cm. on each side of the partition, and 10 cm. from each other. Stereoscopic vision is obtained by the use of prisms with the bases outward, and they are rotated, if necessary, to obtain fusion of the fixation points. The visual field of each eye is thus unrestricted, except to the nasal side, where it is limited to 5 degrees from the fixation point. Although it is impossible to examine the nasal fields by using binocular fixation, this can be accomplished by removing the partition and covering the eye not being examined. The fields are plotted with chalk on the reverse side of the screen, invisible to the patient. The translucence of the cloth makes it possible to see clearly the shadow of the test object at all times from the reverse side of the screen. When finished, the chart is photographed for permanent record. The fields of both eyes can be charted on one

Fig. 2 (Case 2).—Lateral view.

screen, or a fresh curtain may be used for each eye to obviate possible confusion in reading the charts. After washing, the curtains are ready for further use.

In routine practice, the patient is placed with the eyes 55 cm. from the screen. At this distance, clear vision is obtained with little effort of accommodation. The field is large enough for reasonably accurate charting, and, within the 20 degree circle, 1 degree of the visual

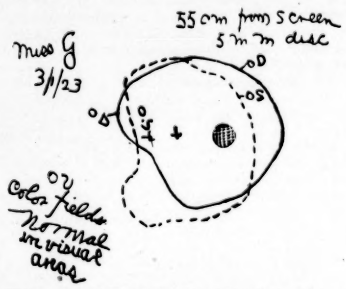

Fig. 3.—(Case 5).—Findings, March 1, 1923: Intra-ocular, negative. Visual fields: Right eye: 1. Slightly enlarged blind spot, 8.5 by 9 degrees. 2. Irregular loss of nasal field. 3. General peripheral concentric contraction of temporal field. Left eye: 1. Blind spot included in loss of temporal field. 2. Irregular loss of temporal field. 3. General peripheral concentric contraction of nasal field. Ocular diagnosis, incomplete left hemonymous hemianopia.

angle is approximately represented by 1 cm. on the screen (10 degrees equal 9.7 cm.; 20 degrees equal 20 cm.). For accurate estimations, a scale has been made, marking the varying distances on the screen representing intervals of 10 degrees of the visual angle. Thirty degrees equals 31.75 cm., and 40 degrees is 46.20 cm. from the fixation point.

It has been our desire to increase the accuracy of the Bjerrum screen by applying stereoscopic vision when possible, and by making the record invisible to the patient. The other features are attempts to simplify permanent records, shorten the time and lessen the trouble.

The neurologist is impressed by the analogies that exist between examinations of cutaneous sensibility and of retinal sensibility. Anesthesias, hypesthesias, hyperesthesias and sensory dissociations have their parallels in absolute or complete scotomas, relative or incomplete scotomas, the loss of color discrimination or color scotomas, and photophobias. In all examinations for the determination of sensory impressions, the cooperation of the subject examined is a prime requisite. Attention and response are necessary, and these activities vary in different patients from zero to a high degree of alertness and promptitude. Variations are common in results of separate examinations of individuals, and even during a single examination apparently inconsistent responses are frequent. Conclusions must often be drawn with a large concession to the theory of relativity.

A visual field chart is a map of the area visible to the patient made with the eye under examination in a fixed position. It is the projection on a surface of subjective visual perception, and varies not only with the organic lesions of the visual apparatus, but also with the functional and psychologic condition of the patient. For neurologic diagnosis, it is desirable that the visual chart should furnish (1) an outline of the full field of vision obtained with a large object; (2) the extent of areas in which small, white and standard colored objects are recognized; (3) an outline of the blind spot, and (4) the outline of any scotomas.

Interpretations of defective fields must consider the method and conditions of the examination, discount the possible margin of error, and explain the defect.

Before the presentation of case reports, certain points concerning visual defects may be reviewed and emphasized. Lesions posterior to the optic chiasm produce defects in the visual fields of both eyes which are approximately symmetrical. When the visual defect is incomplete, the degree of disturbance is equal in the corresponding parts of the homonymous fields. This holds true for organic lesions, whether the resulting defects are hemianopia, quandrantanopia, paracentral scotomas or irregular cuts into the visual fields. This symmetry of defects is remarkable and is maintained whether one or both of the visual tracts are impaired, and without regard to the location of the lesion along the postchiasmal visual pathway.

The complete interruption of one visual pathway causes complete homonymous hemianopia. In this condition, fixa on and approximately normal central vision always remain, but the blind area extends to within a fraction of a degree of the fixation point. This condition can best be demonstrated on the screen at a relatively long distance from the patient, utilizing binocular fixation and assuming good cooperation on the part of the patient. The old conception of a wide, double innervation of the macular area was an error, probably to be explained by faulty fixation and a lack of precision in making tests.

It is generally considered that the typical visual defect of lesions of the optic chiasm is bitemporal hemianopia; but, like many "typical" conditions, it is not always found in perfect form. The bitemporal character of the defects is often entirely lacking, and homonymous hemianopia is not an uncommon result of lesions near the chiasm. As a point of practical importance, it has been emphasized that field defects caused

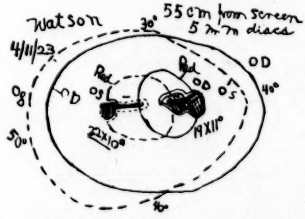

Fig. 4 (Case 6).—Plate 1, April 11, 1923: Intra-ocular findings, haziness of margins, both disks. Visual fields: Right eye: 1. Enlargement and prolongation of blind spot to but not including center of fixation; 22 by 10 degrees. 2. General peripheral concentric contraction. Left eye: Marked enlargement of blind spot to but not including center of fixation. 2. General peripheral concentric contraction. Ocular diagnosis, retrobulbar neuritis, bilateral toxic.

by lesions posterior to the optic chiasm are characterized by an essential symmetry of defect in the homonymous fields of both eyes. Homonymous defects caused by lesions involving the optic chiasm, however, are characterized by the absence of such symmetry. The field of one eye invariably suffers more than that of the other, and the outlines differ in contour. It may be said that lesions in the region of the chiasm give

rise to a wider range of visual field defects than lesions of any other portion of the visual apparatus.

REPORT OF CASES

CASE 1.—W. S., aged 30, admitted to Los Angeles General Hospital, June 4, 1921, had had convulsions for about three years, and complained of headache. Mental dulness and papilledema indicated increased intracranial pressure. The only symptom noted at that time having a localization value was a dimness of vision in the right visual fields. Large objects and movement were recognized in all directions, but small test objects were not seen at any place to the right of the fixation point of either field. The blind areas extended to the fixation point, central visual acuity remaining approximately normal.

Although an exploratory operation performed by Dr. Rand failed to locate a tumor and the patient passed from observation, it is fair to conclude that a progressive, pathologic process had invaded the visual pathway anterior to the left visual cortex. Later developments included a partial sensory aphasia and hernia cerebri. Of particular interest was the manner of development of the visual defect. The hemianopia was for a time overlooked, and, when discovered, careful examination was required to demonstrate it.

CASE 2.—J. W., a man, aged 27, admitted to the Los Angeles General Hospital, Jan. 22, 1923, with general health good and no history of previous illness, had received a gun-shot wound in the head a few hours before admission. He was driving an automobile at night, and was shot from behind. The first sensation of the patient was a flash of light followed by momentary blindness. Vision quickly returned so that he could see objects above the horizontal plane, but was unable to see the road. Feeling uncertain in driving his automobile, he exchanged seats with his wife, who then drove the car. He was not unconscious at any time, and walked into the hospital. There was a bullet wound in the midline of the head in the occipital region, and the roentgenogram showed the presence of a bullet outside the skull. The roentgenogram also showed a depressed fragment of the inner table of the skull at the junction of the lambdoid and sagittal sutures. Dr. Elliot Alden removed the bullet and the depressed fragment of bone on the day of the patient's admission to the hospital. The dura was found to be intact, and was not opened. On examination two days later, the patient showed no symptom of brain injury, with the exception of a disturbance of vision. Central vision was good in both eyes, as was vision in the fields above the horizontal plane. In the lower half of both fields, small test objects were not recognized until they approached the horizontal line. Large objects were discerned 40 degrees below fixation. No difference was noted in the fields of the two eyes, and no difference of the right and left fields of each eye singly. These examinations were made with the patient in bed and without apparatus. Before further studies of the visual fields were made, the patient left the hospital, the fourth day after his admission.

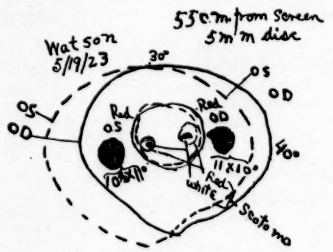

Fig. 5 (Case 6).—Plate 2, May 19, 1923: Intra-ocular findings, very slight haziness of disk margins. Visual fields: Right eye: 1. Moderate enlargement of blind spot, 10.5 by 11. 2. Absolute scotoma, 2 by 3 degrees paracentral. 3. Relative scotoma, 10 by 6 degrees paracentral. 4. General concentric peripheral contraction. Left eye: 1, 2, 3, 4, changes similar to right eye. Ocular diagnosis, retrobulbar neuritis, bilateral toxic. Improvement marked.

This case presents several points of interest of which may be mentioned (1) the subjective flash of light perceived at the instant of the injury to the occipital cortex; (2) symmetrical horizontal inferior hemianopia resulting from a presumably superficial lesion of both occipital lobes close to the midline, about 6 cm. from the apexes of the lobes, and (3) absence of the common general symptom of cerebral concussion.

CASE 3.—Mrs. J. L. A., aged 33, examined, April, 1922, gave an uneventful medical history so far as brain lesion is concerned, with the exception of headaches for three months before examination. Vision of the left eye began to fail early in January, 1922, and progressed until, when first examined, she was able to see only large objects. The vision of the right eye was also impaired, but to a less degree. The vision of the right eye was 6/XIII; of the left eye, 1/L. A high grade choked disk existed in each eye. Brain tumor in the left frontal area was diagnosed and later removed by operation. The fields of vision showed bilateral enlargement of the blind spots, more marked on the left side, where the blind area extended to include the macula. There was also a concentric peripheral contraction of both fields of vision.

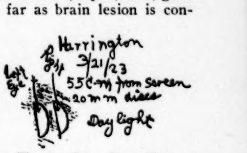

Fig. 6 (Case 7).—Plate 1, March 21, 1923: Intra-ocular findings, slight haziness of disks and retina. Visual fields: Right eye: 1. Total loss of nasal field bisecting macula. 2. General peripheral concentric contraction. Left eye: 1. Total loss of temporal field bisecting macula. 2. General peripheral concentric contraction. Seeing fields are practically superimposable. Ocular diagnosis, complete homonymous hemianopia, bilateral, with general concentric peripheral contraction.

CASE 4.—Mrs. J. B., aged 26, gave a long history of infections from early childhood. Following the birth of one of her children, she had abscesses of both breasts. When she was 20, an appendectomy was performed. She had pneumonia at 21. Since the attack of pneumonia, she had had constant infection in the upper respiratory tract. The outstanding feature of her condition was bilateral, pansinusitis, with asthma. Vision of each eye was 6/VI. There were no marked abnormalities in the media, fundus or reflexes. The visual fields showed marked enlargement of each blind spot, together with bilateral general peripheral contraction for form and colors. The visual defects in this patient illustrate the marked changes, apparently the result of damage to optic nerves secondary to chronic infections.

CASE 5.—G., a woman, aged 37, examined, March 3, 1923, had suffered from chronic pulmonary tuberculosis for several years. About a month before examination, she noticed spots appearing before both eyes to the left and below the center of vision. These appeared to her to be about from 1 to 3 inches in size at a distance of 2 feet, and were surrounded by a yellowish halo. They moved with the eye movements, and she was unable to look directly at them. Complete blindness developed in the area of these spots, which increased in size and lost the yellow halo. When examined, the patient noticed that objects to the left of her line of vision were invisible or indistinctly seen. Reading was difficult because she could not follow the lines of print. Examination showed no abnormalities in ocular movements and no evidence of pathologic changes in the fundi. A well marked refractive error (myopia) was present. The visual fields showed incomplete asymmetrical homonymous hemianopia. In the blind areas, even perception of light was absent. The pupillary reflexes were prompt when the normal retinal areas were illuminated, but appeared to be absent when the source was located in the blind portion of each field.

This patient was under observation for only a short time, and a complete neurologic diagnosis was not established. A tentative diagnosis was made, locating the lesion in the neighborhood of the optic chiasm because of the asymmetrical homonymous hemianopia.

CASE 6.—E. M. W., a man, aged 38, examined, April 10, 1923, whose previous history had no apparent bearing on the condition complained of, about March 15 first noted failure in vision. For about a month previously there had been some paresthesia of both legs. Vision had failed gradually until, when examined, he could read print with difficulty. Previous to the first examination, he had been working for several weeks around the distillate tanks of an oil refinery.

Vision in the right eye was 3/XXX; in the left eye, 2/XXX. Ocular movements and pupillary reflexes were normal. Both fundi showed some blurring of the disks, and the vessels were slightly dilated and more tortuous than normal. The macular area of the left eye and the margins of both disks showed areas in which a slight amount of exudate was present. Neurologic examination was negative. Visual fields showed greatly enlarged blind spots, which partially included fixation areas.

In the course of two months, vision had improved and the defects of the field charts had receded. The character of the visual defect, the condition of the fundus and the history and progress of the case all indicated a toxic etiology, producing a retrobulbar neuritis, showing some evidence of disturbance in each optic disk.

CASE 7.—J. L. H., a man, aged 41, examined, March 17, 1923, whose previous medical history was unimportant, was struck on the head by a piece of rock, March 16, 1922, causing depressed fracture in the right parietal area. The brain was found to be under increased pressure at an early operation. Headache was noted in November. His complaint, when examined, was impaired vision, particularly difficulty of seeing objects to his left.

The vision of each eye was 6/XXX, increasing to 6/IX with correcting lenses. The media were clear. The disks of both eyes were slightly hazy, more marked in the right eye. The vessel walls appeared thickened and more tortuous than normal, but of about normal caliber. The fields of vision showed a left homonymous hemianopia with concentric contractions. The visual areas of each field came exactly to the media line, and extended upward and downward and to the right in each field about 10 degrees. The visual areas were symmetrical and could be superimposed. Comparison of the fields taken with the patient at 300 cm. from the screen with those taken at 55 cm.—both with test objects of 5 mm.—showed a marked difference in size, but this was not proportionate to the difference in distance. This may be explained by the fact that the test object used at a greater distance is relatively smaller.

The outstanding feature in this case is the left homonymous hemianopia, which is complete. There is also a very marked constriction of the right fields of both eyes. The seeing fields as charted on the screen are nearly equal and superimposed. The hemianopia, considered with the pupillary reflexes, indicates a lesion on the right side of the brain, posterior to the primary optic centers. The constricted right fields and a slight evidence of fundus changes are probably to be explained by damages to the optic nerve from previous general intracranial pressure.

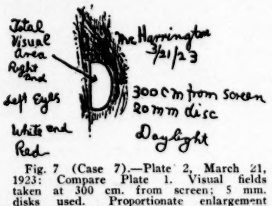

Fig. 7 (Case 7).—Plate 2, March 21, 1923: Compare Plate 1. Visual fields taken at 300 cm. from screen; 5 mm. disks used. Proportionate enlargement with increased distance not absolute; 30 mm. disk should have been used.

CASE 8.—M. H. D., a man, aged 35, examined, April 27, 1923, was in our aviation service during the war. Vision in the right eye was 6/IV; in the left eye, 6/XXX plus 1. Until a few weeks previous to examination, he had had no trouble with his eyes; then he began to notice blurred vision of the left eye.

Examination showed a macular change in the left eye suggestive of minute hemorrhages that have largely absorbed, leaving irregular, mottled appearances of the retina in this area. In the lower nasal temporal margin of the disk, however, there was a depressed, slightly pigmented portion about one fourth of the disk in size and extending slightly into the scleral margin.

Whether the defect was a congenital coloboma or an early stage of melanotic neoplasm of the optic nerve could not be determined. The field showed no appreciable abnormality, with the exception of an elongation of the outline of the left blind spot corresponding to the defect as seen with the ophthalmoscope.

CASE 9.—Mrs. B.'s case is an example of hemorrhagic glaucoma, and shows clearly the "nasal step" quite characteristic of this condition. There was some contraction of the field of vision and a slight enlargement of the blind spot, together with restrictions of the color fields in each eye.

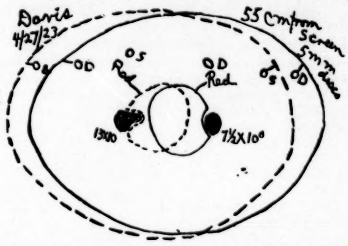

Fig. 8 (Case 8).—April 27, 1923: Intra-ocular findings, slightly pigmented cup-shaped depression, outer lower margin of left optic disk. Visual fields: Right eye: 1. Slightly enlarged blind spot, 7.5 by 10 degrees. 2. Normal peripheral fields. Left eye: 1. Prolongation of blind spot above and toward center of fixation. 2. Normal peripheral field. Ocular diagnosis, coloboma, marginal, left optic nerve.

1920 Orange Street.

TUBERCULOSIS OF THE OS COCCYGIS

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CHICAGO

The pathologic changes in tuberculosis of the spine are well known, and the clinical picture of the disease is recognized without much difficulty. In contrast, tuberculosis of the os coccygis presents a rather characteristic pathologic picture, which has been but seldom described and is generally unrecognized clinically. This has led to failure of diagnosis, years of invalidism in the patients thus affected, and futile operative procedures for the cure of the lesion. The literature of the subject is sparce. Darrah [1] compiled twenty cases in 1893, and in 1904-1905 Caubet [2] reported three cases he had observed and reviewed twenty-five cases compiled from the literature, including Darrah's. With the exception of these reports, only one reference to the subject has been found since 1905.

The histories of two patients observed during the past year will be given, as they illustrate well the essential pathology and clinical picture.

CASE 1.—Mrs. A. T., aged 60, seen with Dr. J. A. Chilcott for examination of an indurated area in the rectum which suggested carcinoma, complained of discomfort in the rectum and vagina and a very painful back low down over the sacrum, which was especially marked on sitting or on attempting to arise from a sitting position. She had been weak and had not been sleeping well. The pain was first noticed in November, 1921. It was intermittent at first, and then became constant. It was worse after sitting, and was not increased by bowel

1. Darrah, R. E.: Boston M. & S. J., 1893, p. 36.
2. Caubet, H.: Rev. de chir. **30**: 201-369, 1904; **31**: 643, 1905.

movement. Discharge from the rectum had been noticed occasionally in the morning. She had never had an abscess in the ischiorectal region.

The general history was negative. She had had hemorrhoids for years. A general physical examination, including a pelvic examination, was negative for pathologic changes. Rectal examination revealed an indurated area the size of a pea above the sphincters on the posterior wall of the rectum.

Under procain, 0.5 per cent., the rectum was anesthesized. A probe passed into the sinus went backward toward the sacrum and coccyx, but did not touch denuded bone. Barium paste injected into the sinus came out higher up in the bowel lumen. Tissue was curetted from the sinus for microscopic examination. Up to this point, it was thought probable that a foreign body had perforated the bowel, causing an abscess in the hollow of the sacrum, and that this had secondarily reperforated into the rectum through the sinus low down in the rectum. Stereoscopic roentgenograms of the pelvis were taken with a probe in the sinus and with barium injected into the sinus, but no involvement of bone was made out. At this point, the sections from the tissue removed were examined, and the granulation tissue was found to be tuberculous. Repeated examination of the spine and pelvis and urinary tract revealed nothing. Thinking that more adequate drainage of this abscess would give the patient some relief from the constant discomfort she was experiencing, I passed a heavy piece of silk through the lower opening of the sinus in the bowel to the upper opening of the sinus, which was just above one of Houston's valves, and this silk was tied tightly in the hope of cutting through the intervening tissue. This result was obtained in a few days, and some relief was afforded; but in a short time all of the symptoms returned. The patient felt that perhaps hemorrhoids, which were bleeding and protruding, were the cause of the pain; and though doubting this, I removed them at another operative session under local anesthesia. This precedure did not relieve the pain. About this time, a very slight redness developed over the coccyx. This was only suggestive, but, owing to the tenderness in this region, I decided to explore the coccyx. Under gas anesthesia, an incision was made over the coccyx and a pus pocket was entered. The coccyx was the seat of an osteomyelitis, and the lower two segments of the sacrum were removed. The patient obtained almost instantaneous relief, and at present, about eleven months from the time of the removal of the coccyx, she is symptom free and has gained in weight and strength. She still has a small sinus, which reaches to the rectum, but apparently does not connect with it. This sinus is becoming progressively smaller. The microscopic examination of the coccyx revealed a tuberculous osteitis.

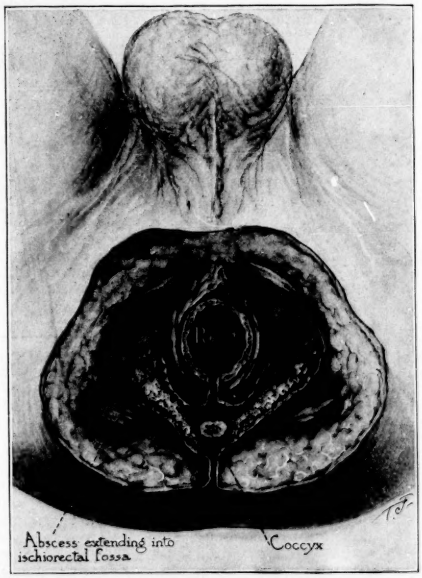

Fig. 1.—Extent of tuberculous process from os coccygis (diagrammatic).

CASE 2.—R. G., a man, aged 47, referred by Dr. Carl H. Dragstedt, complained of a discharging perirectal sinus and pain in the back and rectum, loss of weight, weakness and marked constipation. During the last ten years, he had had three perirectal abscesses opened, and six years ago had an extensive operation performed for fistula in ano, which resulted in a partial incontinence of the sphincters and left him with pus discharging from three external openings in the right ischiorectal fossa, as well as a pus discharge from the rectum which necessitated frequent changes of dressings. Bowel movements had been induced by catharsis to avoid constipation, which caused severe pain during and after bowel movement. For several months, severe pain in the lower spine had made it difficult for the patient to sit down with comfort. He had lost 20 pounds (9 kg.), and had an afternoon rise of temperature. He had been drinking heavily to relieve the pain.

Examination showed no constitutional disease. Around the anus on the right side were three discharging sinuses, which communicated with an indurated ulcer the size of a dime on the posterior wall of the rectum, just above the mucocutaneous line. In all of the lesions, a copious discharge of pus was present, and the process had the clinical appearance of tuberculosis. The external sphincter muscle had been cut, and was incompetent. At the level of the ulcer, a stricture had developed which admitted the index finger snugly and which compensated for the incontinence of the sphincter. There was some tenderness over the coccyx exteriorly, but no swelling or redness. The appearance of the lesion was that of an ischiorectal tuberculosis which had secondarily broken into the rectum.

Nov. 7, 1922, under gas-ether anesthesia, three ischiorectal sinuses on the right side were dissected out and connected with the rectum low down outside of the sphincter. A probe in the rectal ulcer passed through the bowel wall posteriorly and then upward for 5 inches, but no denuded bone was touched. This rectal opening was dilated to insure better drainage. Section from tissue showed a microscopic picture of tuberculosis. Roentgenograms were now taken of the pelvis, spine, sacrum and coccyx, but no bone changes were seen.

The patient improved greatly as far as local discomfort was concerned, but had a great amount of pus discharging from the rectal opening. His temperature was around 100.5 F. in the evenings. At this period, the patient went home, but returned in three weeks with a temperature of 104, profuse discharge from the rectum, and marked tenderness over the coccyx and over both ischiorectal regions. Examinations, including roentgenograms of the sacrum and coccyx, revealed no additional findings except a slight hyperemia over the region of the coccyx, and some induration deep in the ischiorectal region. Exploration of these regions was decided on.

December 14, under gas-ether anesthesia, the coccyx was exposed by an incision directly over it, and when the posterior ligaments were divided, the whole coccyx was found lying free as a complete sequestrum. Through its bed, a sinus ran anteriorly to the ulcer in the rectum and laterally into the ischiorectal fossa on each side, where well walled off abscesses, deep in the fossae, were drained by separate incisions through the ischiorectal fat. The sacrum was not involved. All wounds were left wide open.

Sections of the os coccygis showed tuberculosis of long standing.

After the last operation, the patient's health at once improved. He has gained 20 pounds in the last four months, has no pain, and is actively at work. He has a slight pus discharge from the rectal defect, which is not entirely closed. There is also a small sinus in the scar of the incision over the coccyx. This is gradually becoming smaller.

In neither of these two cases was a history of trauma present; nor was there any known reason for localization of the tuberculous process in the os coccygis. It might be supposed that the tuberculous process in the bowel was primary and the involvement of the bone secondary. Opposing this view are the facts that the lesions in the bowel were more recent than the bone changes in both cases, as the coccyx was completely sequestrated. In addition, primary tuberculosis of the rectal mucosa without pulmonary or other intestinal tuberculosis is extremely rare. Lastly, the rectal lesions were not active ulcerative processes, but were openings of fistulas into the bowel.

If the tuberculosis of the os coccygis is considered in the light of the twenty-seven reported cases, it is found that seventeen patients were men and ten were women, and that the age of the patients has varied from 2½ years to 70.

Traumatism to the coccyx by falls or injuries has been mentioned in ten cases, but the active symptoms of tuberculous osteitis have not developed at once but following the trauma from three months to six years. The latter time limit obviously throws some doubt on the importance of trauma as an etiologic factor. It would be fair to assume that it played about the same rôle as it does in the production of bone and joint tuberculosis elsewhere.

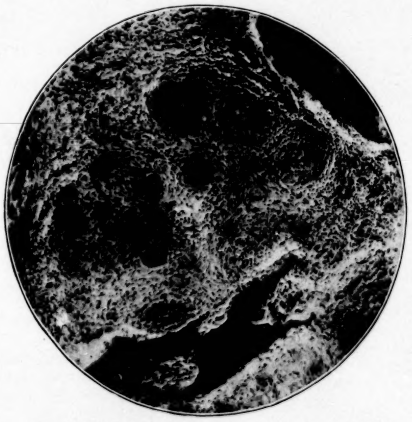

Fig. 2.—Tuberculosis of os coccygis, as shown on microscopic examination.

The general health of the patients prior to the onset of symptoms of the local lesion has been good, and generalized tuberculosis has been conspicuously absent. The onset of the lesion is usually insidious, and the patient first suffers backache, which is over the sacrum and coccyx. Difficulty of locomotion, and inability to rise from a sitting position due to discomfort as well as tenderness over the coccyx while sitting, are early symptoms. Defecation is usually not painful.

Abscess formation is constant and usually develops insidiously as a chronic inflammtory swelling, finally reaching through the skin over the coccyx or more rarely, as evidenced in the two cases just reported, into the rectum. When the abscess finally opens externally, a rather copious seropurulent discharge continues from it. If the abscess opens into the rectum, a secondary infection may supervene with fever, prostration, loss of weight and all of the findings of an acute infection. Usually the course of the infection is of slow progress, and the disease continues for years until the dead bone is removed or, rarely, is discharged spontaneously, as occurred in one patient.

PATHOLOGY

Tuberculosis of the os coccygis usually develops as the sole known lesion of tuberculosis in the patient, and is probably a hematogenous infection. Secondary involvement of the coccyx by extending from tuberculosis of the spine or sacrum is very rare.[3] Likewise, when tuberculosis of the coccyx has been observed, the sacrum has been uninvolved except in three cases observed by Caubert and Darrah and in one of the cases reported in this article.

The essential pathology of tuberculosis of the coccyx is that of bone tuberculosis elsewhere, resulting in bone necrosis and cold abscess formation. In cases of several years' standing, the coccyx is entirely sequestrated and lies free, encased in the fibrous capsule composed of the anterior and posterior ligaments. The cold abscess that forms has some very characteristic features in that it usually forms on the anterior wall of the coccyx and secondarily takes three courses. It may rupture into the rectum, as it did in the two cases here reported. The site of rupture into the bowel is above the sphincters in the lower portion of the ampulla of the rectum. In one of the cases there were two openings into the rectum. More frequently, the abscess gravitates downward and points at the tip of the coccyx in the midline just posterior to the anus. The third location for the cold abscess to gravitate is into one or both ischiorectal fossae. When this happens, the abscess lies deep in the fossae just below the levator ani muscle, and may reach considerable size before any external transformation or color changes in the skin occur. Finally, these ischiorectal abscesses reach the surface and ulcerate through the skin, making sinuses into one or both ischiorectal fossae.

If the abscess ruptures into the rectum, secondary infection of the whole abscess cavity results, and a rapidly spreading acute pyogenic infection may occur.

DIAGNOSIS

The diagnosis of tuberculosis of the coccyx is generally not made, though, I believe, the condition is present more often than is suspected and is responsible for a number of persistent tuberculous sinuses in the ischiorectal region. It must be thought of in patients having backache and discomfort in the back while sitting or in the act of rising from a sitting position, who have a chronic discharging sinus in the ischiorectal region. Pain on pressure over the coccyx, either externally or through the rectum, in such a case is contributory evidence, and a sinus developing in the midline over the coccyx or at its tip is very suggestive. The roentgen ray, peculiarly enough, is not very helpful. A series of stereoscopic plates was made in both of my cases,

3. Conta: Thèse de Paris, 1887. Lamelogue: Tuberculose vertebrale, Paris, 1888.

with negative results. This is due to the difficulty in getting a clear picture of the coccyx and, more especially, because there is practically no new bone formation and also that the sequestrated coccyx is not especially deformed in the early stages of the disease and still contains a considerable amount of calcium salts.

The passage of a probe through an ischiorectal sinus toward the coccyx which touches dead, denuded bone, is pathognomonic.

One of the most important points in diagnosis is to think of the fact that the coccyx may be the seat of a tuberculous osteitis.

The differential diagnosis must exclude pyrogenic fistula in ano, the origin of which is an acute, rapidly developing ischiorectal abscess, which differs materially from the insidious onset of the tuberculous process. The internal opening of the ordinary fistula in ano is at the mucocutaneous line between the sphincters and the external opening, and allows a probe to be introduced into it toward the rectum and away from the coccyx.

Tuberculosis of the ischiorectal fat is harder to differentiate. It is more common than tuberculosis of the coccyx, and usually develops more superficially, with the appearance of several nodular masses, which coalesce and break down to form sinuses over one or both ischiorectal fossae. The involvement of the rectum is usually secondary, owing to the process rupturing into the rectum by continuity. In this, it resembles tuberculosis of the coccyx. Every such ischiorectal tuberculosis should be examined to determine where the coccyx is tender and as to whether a probe introduced into the sinus touches denuded bone. Tuberculosis of the ischiorectal fat rarely has a sinus in the midline posteriorly.

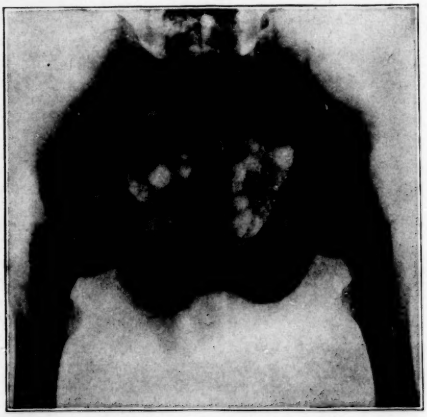

Fig. 3 (Case 1).—Relatively normal os coccygis.

The sinuses of a pilonidal cyst are present at the sacrococcygeal articulation in the form of posterior anal dimples or depressions, and these are characteristic. If the pilonidal cyst becomes infected, and it generally does, the abscess may rupture through the lining of the original cyst carrying part of the cyst wall into one or both ischiorectal fossae, where new cysts are generated, and the lesion thereby becomes large. I have seen the entire ischiorectal fossa filled with such a tumor. The underlying bone is rarely involved, as it is protected by firm ligaments so that the course of least resistance is away from the coccyx and sacrum. The similarity of these two conditions lies in the position of a sinus in the midline over the coccyx.

Gravitating abscess from tuberculosis of the sacroiliac synchondrosis, Pott's disease, tuberculosis of the tubes or appendix and tuberculosis of the hip may rarely appear in the ischiorectal fossae, but concomitant symptoms of the original lesion will usually make the diagnosis possible.

Fig. 4 (Case 2).—Probe through rectal opening of sinus running toward normal appearing os coccygis.

Old fractures of the coccyx or pain in the region of the coccyx from chronic arthritis of the spine would be very easily recognized.

TREATMENT

The treatment of tuberculosis of the coccyx is removal of the coccyx by an incision over it. Jean Louis Petit reported the first case in 1790, and resected the coccyx.

In nineteen cases in which the coccyx was resected as reported by Darrah, sixteen of the patients recovered. In both of the cases reported in this paper the patients are symptomatically and generally well, but each one has a small sinus reaching from the incision to the bed of the coccyx. These sinuses are getting smaller, and seem to have every prospect of closing.

Where the abscess has opened into the rectum, a subsequent plastic operation to cover the defect may be necessary. The operation proposed by Elting, of sliding a flap of mucosa over the opening into the bowel, would be adaptable for this purpose.

25 East Washington Street.

Automobile Fatalities in United States, 1917-1922.—The Department of Commerce announces that the returns compiled by the Bureau of the Census show that during the year 1922 11,666 deaths resulting from accidents caused by automobiles and other motor vehicles (excluding motorcycles) occurred within the death registration area of the United States (exclusive of Hawaii), which area contains 85 per cent. of the total population. This number represents a death rate of 12.5 per hundred thousand population, as against 11.5 in 1921, 10.4 in 1920, 9.4 in 1919, 9.3 in 1918, and 9 in 1917. In the twenty-seven states for which data for 1917 are available the number of these deaths increased from 6,014 in that year to 9,581 in 1922, the corresponding rates for these two years being 8.7 and 12.9.—*Pub. Health Rep.* **38**:2889 (Dec. 7) 1923.

CALCIFICATION OF RENAL VEIN WITH BILATERAL NEPHROLITHIASIS

REPORT OF CASE *

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AND
CHARLES S. LAWRENCE, M.D.
WINSTON-SALEM, N. C.

Anomalies of the renal veins in size, position, number, anastomoses with other organs, etc., are quite common, but we have found no report in the surgical literature of calcification of a renal vein accompanying kidney stones. Personal communications from various leading clinics fail to reveal any similar case.

Embryologically, the kidney vessels are well developed by the end of the seventh week of fetal life. The veins are primarily outgrowths from the cardinal veins. Later, as these veins atrophy, the renal veins communicate directly with the vena cava. Anatomically, the anastomosis between the smaller veins is quite free, for, unlike the arterial supply in the so-called "bloodless area," the veins cross from the dorsal to the ventral half of the kidney through the intercalical branches. There is also an inner and outer system of anastomosis by means of the venous arches and polar systems, insuring free egress to the blood leaving the kidney. The veins, as they leave the kidney, collect on the ventral surface of the kidney pelvis, three trunks usually being present. These vary from 6 to 7 mm. in diameter; the upper two, as a rule, unite and form a large trunk about 9 mm. in diameter, the lower branch being from 6 to 7 mm. It is the latter branch that is of interest in this report, the area of calcification occurring in this vein, anterior to the pelvis, just at the point where the vein crosses the pelvis.

Fig. 1.—Stones in both kidneys; arrow points to calcified area in vein of right kidney; all the roentgenograms have been retouched.

In considering the cause of this rather unusual condition, various theories might be discussed. It is our opinion, after carefully studying the case, pathologic report, and findings at operation, that this is a case of focal infection. Rosenow and Meisser,[1] in a recent study of the causes of nephrolithiasis, have been able to demonstrate stones in the kidneys of animals inoculated with bacteria from a patient suffering with nephrolithiasis. This was done under careful control in enough cases to warrant careful consideration of this factor. The bacteria were of a strain that had an elective localization in the nephrogenic tissue. Whether the bacteria are of a stone forming strain per se, or whether the calcium salt deposit is a result of some secondary group of organisms is an open question. The fact that both kidneys contained many stones is in favor of the theory of elective localization of bacteria. Whether other tissues would have contained deposits of calcium if brought under the influence of this particular strain of organisms remains in doubt.

Fig. 2.—Pyelogram of right kidney, showing the stones and area of calcification to correspond to the same location; there is a kink in the ureter below the pelvis.

REPORT OF CASE

A white woman, aged 51, entered the hospital, April 25, 1923, complaining of pain in the epigastrium, together with the passage of many urinary calculi. The family history was unimportant. The patient had had the diseases of childhood, pneumonia when 5 years of age, and smallpox at 48, but no other serious illness. The menses began at 15, and were regular and of five days' duration; the menopause occurred at 45. The patient had ten living children and one died in infancy. She had had indigestion for the past eighteen years, with shortness of breath and a choking sensation in the epigastrium. The ingestion of food had no relation to the pain in stomach, and there had been no eructations, gas, jaundice, nausea or vomiting of blood at any time. In the last twenty years she had passed at least twenty-five small calculi, the passage being associated with some hematuria, and at times with pain in the side and back. She had some difficulty in voiding urine at times and on occasion was not able to pass any; this had been followed by the passage of a large quantity, with immediate relief of the epigastric pain.

The patient was well developed but poorly nourished. The gums were diseased, and the tonsils infected. Hammer percussion over the kidneys elicited tenderness, more marked on the right side. The kidneys were not palpable on deep pressure. No evidence of disease was detected in other organs. The patient was nervous and cried easily. Blood examination revealed: leukocytes, 12,000; hemoglobin, 75 per cent. Urinalysis of a twelve-hour specimen revealed: erythrocytes, 2 (on a scale of 4); pus, 1 (on a scale of 4). The systolic blood pressure was 110; diastolic, 60. A roentgen-ray examination of the gastro-intestinal tract revealed no abnormality,

* Read before the Hospital Staff, City Memorial Hospital, Winston-Salem, N. C., May 19, 1923.

1. Rosenow, E. C., and Meisser, J. G.: Nephritis and Urinary Calculi After Production of Chronic Foci of Infection, J. A. M. A. 78: 266 (Jan. 28) 1922.

though gallbladder adhesions were suspected. The roentgen-ray examination of the urinary tract showed five stones in the right kidney area and ten stones in the left side. In the right kidney area an indefinite mass was seen in the kidney pelvis region, not as well defined as the other shadows. Cystoscopy was done and roentgen-ray catheters were passed to the kidney pelves; a pyelogram on the right side, to locate the shadows, indicated that they were in the renal pelvis.

Fig. 3.—Location of stones in ends of calices of left kidney; the right kidney area is normal; this pyelogram was made two weeks after the right kidney was operated on.

An intravenous phenolsulphonephthalein test resulted in the return of 12 per cent. on the right, and 20 per cent. on the left, in fifteen minutes.

April 30, an exploratory incision was made. The kidney was delivered through a right oblique incision just below the twelfth rib. The kidney was somewhat adherent and was delivered with some difficulty. A mass was palpated in the region of the pelvis, which was opened posteriorly; two small stones were removed. The mass that was thought to be in the pelvis was in the lower branch of the renal vein. The vein was incised and the mass removed. On its removal, hemorrhage was profuse, but was controlled by pressure. The branch from which the mass was removed was sutured with No. 0 chromic catgut, leaving a good return flow of blood through the other branches. As the other stones were too large to be removed through the pelvic incision, the kidney was opened along the posterior margin, and three stones

Fig. 4.—Mass (at left) and stones removed from the right kidney.

were removed. The incision was closed with a continuous mattress suture, the capsule with a continuous suture. The kidney space was drained with a cigaret drain; the muscles and fascia were approximated with No. 2 chromic catgut, silkworm stay sutures, and linen for the skin. The drain was removed two days later, the incision healing by first intention. There was very little blood in the urine following the operation.

May 5, twelve decayed teeth and the tonsils were removed. On the withdrawal of a tooth under the left maxillary antrum, 5 c.c. of pus escaped from the antrum. This was kept open, and healed quickly.

May 13, cystoscopy was done; the right kidney function was found to be 12 per cent. for fifteen minutes; the left side was normal. A pyelogram was made on the left kidney, and the stones were found in the region of the pelvis. They were too large to pass through the calices, so no further manipulation was done. The right kidney region was free from stones, and normal throughout. The patient was discharged to return in one month for another kidney function test and general examination. She was told that it would be necessary to do a nephrotomy later on the left kidney to remove the stones in that organ. She was instructed to drink large quantities of water and keep a lookout for any stones that might pass. She returned, June 15, and said she was feeling very well. Cystoscopy was done and catheters were passed to each kidney, and a phenolsulphonephthalein test was again made. The function of the right kidney was 15 per cent. for fifteen minutes, with 20 per cent. on the left side; the excretion of urine was about the same on the two sides. Pus 2 was found in the specimen from the right kidney, with erythrocytes 1 (on a scale of 4); on the left side, erythroyctes 2 (on a scale of 4) were seen.

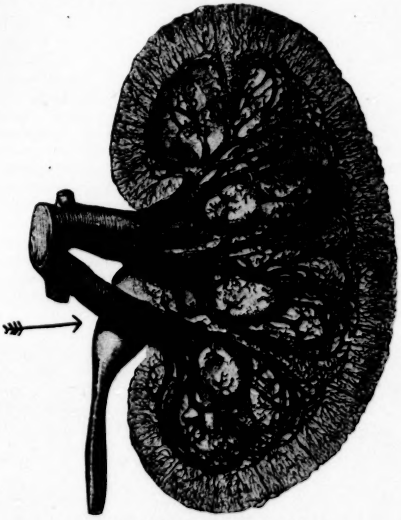

Fig. 5.—Location of calcified area.

The specimen removed from the renal vein was sent to Dr. J. B. Bullitt, pathologist at the University of North Carolina, who reported that the specimen consisted of a thin walled tube about 10 mm. in length and 7 mm. in diameter. On one side was a small, saccular dilatation. At this point the wall was 1 mm. in thickness, but for the most part it was not more than 0.2 mm. thick. Everywhere it was stiff, hard and brittle, cracking easily from pressure with the finger. It resembled a vein whose walls had become completely calcified. Part of the interior lining was smooth and part of it harsh and rough. Both inside and out it was a brownish gray. The specimen was too hard to cut with a knife. It was therefore divided with a fine saw. One portion was completely decalcified with nitric acid and then embedded and sectioned. Another portion was partially decalcified, just enough to permit cutting some rather thick sections, but leaving much of the calcium salts still in the tissues.

Microscopically, the sections showed a venous wall. In some places the intima with its lining endothelium was still intact, but for the most part it was replaced by an irregular layer of unorganized granular material, evidently a calcium

deposit. The media, which was somewhat thicker than is usual for the renal vein, consisted of a close set hyaline fibrous tissue, in which there had been deposited numerous fine, basophilic granules (calcium). The loosely woven connective tissue of the adventitia showed considerable hyaline change, and in its meshes were multitudes of fairly good sized globules of calcium. Here and there large plates of calcium deposit had spread apart the connective tissue, both in the media and in the adventitia, but especially at the junction of these two coats. In the thoroughly decalcified sections these showed simply as empty spaces, but in the partially decalcified ones remnants of the formless granular deposits remained.

Dr. Bullitt was of the opinion that such extreme calcification of a renal vein was most unusual. In this case the calcification was in the wall of the vein at the junction of the media and adventitia, and did not seem to have encroached on the lumen of the vein enough entirely to shut off the return flow of blood, thus allowing time for a collateral venous circulation to become established. This probably accounted for the good function of this kidney. There was no evidence of any thrombus formation, which is relatively common as a result of some local cause. The endothelium of the intima was intact, and the calcium deposit was well within the body of the vein. On Dr. Bullitt's advice, a search was made for other areas of calcification but none were found, either by the roentgen ray or by other methods. There was no evidence of arteriosclerosis in any vessels. Whether the focus of infection was in the tonsils or the teeth or in the diseased antrum was not determined. If the theory that this pathologic process was a result of elective localization of a stone-forming group of organisms is correct, there should be no return of the nephrolithiasis, as the cause has been arrested.

NEURO-ARTHROPATHIES: A CONSIDERATION OF THE ETIOLOGY AND GENERAL CHARACTERISTICS

WITH SPECIAL REFERENCE TO THAT FORM CAUSED BY PERIPHERAL NERVE DISEASE OR INJURY *

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NEW YORK

The association of bony changes—limited principally to joint structures—with grave disease of the central nervous system has been observed for a great number of years. The recognition of such structural osseous anomalies occurring in the course of tabes and syringomyelia was given impetus by Charcot, who was first to describe them accurately. Thus, the term Charcot joint found universal acceptance in the literature and was readily interpreted as a destructive arthritic process, dependent on and secondary to involvement in a disease process of certain fiber tracts in the spinal cord parenchyma. As tabes and syringomyelia were apparently the only affections that developed such arthropathies fairly consistently, it was readily assumed that they were peculiar to these diseases only and that such profound joint changes could develop on no other basis.

The advent of the roentgen ray served further to emphasize the existence of these arthropathies, since the diagnosis could be made quite early before they are demonstrable clinically and before grave destructive changes take place. The assumption that they existed only in association with such diseases of the central neural axis as tabes and syringomyelia seemed justifiable, since these arthropathies were never observed in any other condition. The routine use of the roentgen ray in bone and joint conditions, however, revealed the fact that affections other than those heretofore mentioned were capable of setting up changes in joints comparable to the classic arthropathy of Charcot, and it is of these in particular that we wish to speak. The literature and a number of textbooks make vague references to neuropathic arthritides as a result of nerve lesions other than syringomyelia or tabes, but quote no specific instances. Obviously, these authors observed no personal cases, merely contenting themselves with the usual stereotyped textbook quotation.

The most recent and comprehensive article on the subject is by Hildebrand,[1] who shows definitely the existence of arthropathies in diseases of the peripheral nerves, and cites a personally observed instance of a spina bifida occulta with arthropathic changes; he also quotes a case of Riedel in which a stab wound of the spine between the first and second lumbar vertebrae induced an arthropathy. In addition, he quotes similar observations by Vigne, Joffroy, Salomon and Kirmisson. Chipault observed joint changes following fractures of the spine, and Charcot [2] observed mild arthropathies following stab wounds in a similar location. In all of these cases, it was definitely proved that the cord itself was not injured, and that the trauma involved the lower lumbar or sacral roots. It may be interesting at this point to mention the observation of Virchow, who noted that bony changes may occur after changes in nerve structures of a deleterious character. As he did not specifically mention tabes or syringomyelia, he evidently had in mind affections of the peripheral neural apparatus. At least such an inference is drawn from his notations.

That we may have to abandon our old conceptions of the central origin of arthropathies in general, and consider a purely peripheral source for the bony disturbances seems certain in the light of accumulated data. The war, in particular, brought forth a rich array of material in which countless peripheral nerve injuries produced marked bone changes. These have been described by many authors, notably Fleischhauer,[3] Lehman [4] and Maliva.[5] Obviously, the acceptance of the peripheral versus the central origin of arthropathies may be difficult to believe, in view of the fact that tabes and syringomyelia, which are affections of the central nervous system, apparently yield the largest number of neuropathic joint affections.

While it may seem somewhat hazardous and revolutionary, in the present state of our knowledge, to advance the theory that tabes and syringomyelia are peripheral in origin (this conception hardly holds in syringomyelia, in particular), it may not be amiss to quote the observations of Westphal, Poncet, Dejerine and Oppenheim [2] that in tabes changes of a degenerative character occur in peripheral nerves. Oppenheim,

* From the Departments of Roentgenology and Neurology, Hospital for Joint Diseases.

1. Hildebrand, O.: Ueber neuropathische Gelenkerkrankungen, Arch. f. klin. Chir. **115**: 443 (March) 1921.
2. Quoted by Hildebrand (Footnote 1).
3. Fleischhauer: Ueber Nervenverletzungen, Berl. Klin. Wchnschr., 1915.
4. Lehman: Zur Frage der neurotischen Knochenatrophie, insbesondere nach Nervenschüssen, Med. Klin., 1917, No. 22.
5. Maliva: Trophische Hörungen nach Verletzung peripherer Nerven mit besonderer Berucksichtigung der Knochenatrophie, Med. Klin., 1917, Nos. 27 and 28.

in support of the peripheral theory, goes so far as to say that accumulating evidence seems to point that the pathologic process in tabes starts in the ganglions and spinal roots. Schlesinger and Chantemesses [2] also found brachial plexus changes in syringomyelia. Obviously, one may rightly insist that this pathologic condition of the peripheral nerves is secondary to the main affection in the central nervous system. This in our minds deducts nothing from the possible etiologic relationship of arthropathy to peripheral nerve disease. The association of countless nerve injuries of a purely peripheral character with arthropathies lends, we believe, more than theoretical support to the peripheral origin of the arthropathies in general.

An interesting example of a neuropathic arthropathy purely peripheral in origin and character has been

Fig. 1.—Appearance of left shoulder.

recently reported by Duncan.[6] In this instance, a trauma to several posterior cervical and thoracic roots produced a classical arthropathy in the wrist joint on the side of the injury. In view of the fact that the trauma in this patient had occurred four years prior to the clinical and roentgen-ray study, one may venture to assume that retrograde changes in the posterior roots finally implicated their spinal distribution in the dorsal columns, and thus paved the way for the development of the bony changes in the wrist. This militates somewhat against the assumption that arthropathies are peripheral in origin, since the inference can readily be drawn that the development of the wrist arthropathy occurred only after the cord changes mentioned above had initiated so-called "trophic" disorganization.

This brings us to a consideration of trophic phenomena in general, and whether these manifestations are the result of peripheral or central causes. Without going into the subject in detail, it has been obvious to any one familiar with clinical neurology that trophic changes are observed with equal incidence in peripheral and central diseases of the nervous system. One may, in brief, accept the dictum that any pathologic affection of the nervous axis (be it central or peripheral) which interferes with the "neural nutrition" of a part will, in time, initiate trophic disorders. These may involve bone, muscle or skin. Thus one can readily visualize the grave trophic changes that occur after myelitic disease, or the lesser disturbances that follow the neuritides. While it is true that graver trophic changes occur in central disease than in peripheral, this may readily be explained by the fact that the former affects segments of the cord, while the latter affects merely a fragment of a segment.

Thus, in the consideration of trophic disturbances in general, the foregoing facts apparently do not militate against the peripheral theory of the affection. At least, one may give it equal prominence with the central theory in the etiology of trophic disease.

In this connection, we wish to place on record an unusual arthropathy recently studied, which we have been unable to classify and which failed to reveal abnormalities, either peripheral or central, after a searching examination. It is our belief, in a theoretical sense, that prolonged muscular strain and its possible subtle influence on the trophic mechanism of the peripheral neural apparatus may have been responsible for the development of the arthropathy. A thorough search of the literature discloses no similar instance of joint disorganization without associated neural pathology.

That this possible widespread misconception of neuro-arthropathies may have great potentialities for harm makes it imperative that its existence be recognized outside the domain of the tabetic or syringomyelitic patient.[7] The detection of a neuro-arthropathy presents no special difficulties and need not be dwelt on. Confusion will arise, however, when such an instance presents itself in the absence of the accepted orthodox diseases which create neuro-arthropathies. This state of affairs occurred in the patient studied by us, and the misinterpretation of the negative neurologic and serologic findings led his previous medical advisers to perform an unnecessary joint operation for suspected malignancy.

REPORT OF CASE

History.—H. O., a man, aged 30, applied for treatment, Feb. 19, 1923, at the clinic of the Hospital for Joint Diseases. His chief complaint was incapacity from a markedly swollen condition of the left shoulder girdle. The patient's past history and the family history were irrelevant. For the past seven years he had been an ice and coal dealer, frequently carrying from 50 to 100 pound loads on his shoulders, and occasionally he was compelled to drag 300 pounds of ice unassisted. Three years ago, a very heavy piece of ice fell on his left hand, crushing the little finger and producing a compound fracture. This required an operation, which included curetting of the bone.

6. Duncan, J. H.: Neuropathic Arthritis, J. A. M. A. **79**:1987 (Dec. 9) 1922.

7. One of us, very recently, while on an extended visit to European clinics, questioned several prominent roentgenologists and orthopedists on the incidence of neuro-arthropathies of unknown or uncertain etiology in their practices. Their answers were quite uniform and to the effect that whenever a neurotrophic joint was encountered, it was considered a condition arising from spinal cord disease or injury, and that the great majority of these cases were secondary to tabes dorsalis. Some of these specialists admitted that this cause was so uniform in their experience that they would subconsciously associate their cases with locomotor ataxia, and not consider their etiology any further.

Six months ago, the patient wrenched his left shoulder while pulling 300 pounds of ice. Cups were applied, and he returned to work the same day. Two months later, he noticed a moderate swelling of the left shoulder, with slight limitation of motion of the left arm. He recalled having no pain in the shoulder at this time and only very slight pain subsequently. He continued with his work for seven weeks later, when he consulted his private physician for the first time. He was told he had "water on the shoulder," and was referred to the Hospital for Joint Diseases.

Examination.—The patient was very robust, well nourished, and of good color. The physical examination was entirely negative except for the left shoulder girdle, which was considerably enlarged. The superficial veins over the shoulder and the front of the chest were greatly swollen. No discoloration was present, but the skin was tense and glossy over the swelling. Movements of the shoulder were not interfered with except in extreme abduction. No lymph nodes were palpable. A careful neurologic examination revealed no demonstrable abnormalities in either the central or the peripheral neural mechanisms. A blood Wassermann reaction was negative.

A roentgen-ray examination revealed that the shoulder joint was disorganized, with extreme destruction of the head and neck of the humerus, of the distal end of the clavicle and the end of the acromion process. There was considerable joint detritus present from the destroyed articular ends of the bones forming the shoulder girdle. There was no bone or soft tissue atrophy; on the contrary, there was marked soft tissue tumefaction about the joint. A Wassermann reaction, neurologic examination, and another roentgen-ray examination for spine anomaly or injury were advised. The appearance of the shoulders was characteristic of neuro-arthropathy. A few days later, the second roentgen-ray examination disclosed the fact that the cervical and upper dorsal spine showed no evidences of old or recent injuries or of congenital anomalies.

Course.—The condition, locally, presented preponderant signs of an extensive malignant tumor. This diagnosis appeared all the more tenable in view of the negative neurologic examination and serologic tests. However, the roentgenograms positively excluded malignancy and were sufficiently characteristic as to permit of a positive diagnosis of a neuro-arthropathy, in the face of all other conflicting data. On the basis of the report of the roentgen-ray findings, the patient was treated conservatively, and advised to return regularly at two-week intervals for further observation.

Not satisfied, however, with palliative treatment, the patient went to another hospital, where he was examined and roentgenograms were taken. He was advised to submit to an extensive shoulder amputation next day. His relatives were informed that he had cancer and could not possibly live more than eight weeks. He was taken home immediately, and on the next day was taken to another and larger hospital. The condition here also was considered to be malignant, and after a few days of observation, an operation was performed on the shoulder, and some of the joint detritis was removed. Radium was inserted into the joint and removed six hours later. The patient remained in the hospital for twenty-seven days.

After examining sections of the excised tissues, Professor Ewing reported them as being nonmalignant.

While in the hospital, the patient began to notice swelling of the right shoulder joint, accompanied by slight discomfort and limitation of motion.

Owing to the extremely unusual and interesting features of this case, a social worker called repeatedly at the patient's home to induce him to return to our hospital for further observation, and a few days after his discharge from the hospital, he finally appeared at our clinic again. The left shoulder presented a well healed linear scar from the operation, with, however, little change, if any, in the appearance of the immense swelling of the left shoulder girdle. In addition, the same condition, but to a lesser degree, was present in the right shoulder. Roentgen-ray examination of the right shoulder joint showed the presence of a neuro-arthropathy of a slightly less intensity than that previously observed on the left side.

The patient has been observed at monthly intervals since the operation, and the bilateral condition has remained unchanged in both the physical and the roentgen-ray appearance.

CONCLUSIONS

1. In the light of the facts stated above, it is our opinion that neuro-arthropathies caused by peripheral nerve disease or injury or other factors not definitely understood may occur with more frequency than is usually believed.

2. It is our opinion that these neuro-arthropathies are possibly misinterpreted, on account of the absence of demonstrable disease of the central nervous system.

Fig. 2.—Appearance of right shoulder.

3. In the wake of such misinterpretation, extensive joint operations may be performed unnecessarily, as in the case cited.

4. The possibility of neuro-arthropathy should always be considered in obscure or ill-defined joint manifestations, even in the absence of cord disease. The etiology may be found in disturbances of the peripheral neural apparatus or other hitherto unknown factors.

9 West Sixty-Eighth Street—370 Central Park West.

Heart Involvement in Tonsil Infection.—Apart from physical signs such as bruits, enlargement and pallor, the severity of each heart case must be estimated by the effort tolerance. Improvement in physical efficiency is a direct guide to the value of treatment and is the chief test on which one relies, especially in cases of early mitral stenosis, the progress or retrogression of which is difficult to determine by the auditory phenomenon alone.—H. J. Starling: *Guy's Hosp. Rep.* **73**:396 (Oct.) 1923.

Clinical Notes, Suggestions, and New Instruments

A SIMPLE AND INVISIBLE DROP-FOOT BRACE

WALTER I. GALLAND, A.B., M.D., NEW YORK

In the infantile paralysis clinic of the Hospital for Joint Diseases, and in the orthopedic dispensary of the Lenox Hill Hospital, I have encountered many cases of paralytic drop foot in which the use of a brace is indicated. These cases usually comprise children with severe paralysis of the dorsiflexor muscles, but with little absolute deformity of the architecture of the foot, and with good functional use of the leg and thigh.

Fig. 1.—Construction of the tongue pocket: *A*, steel springs; *B*, felt padding.

The brace usually given in these cases consists of a metal foot plate which is joined at the upper extremity by a calf band. A single upright is sometimes used. A joint is provided at the ankle with a stop which permits dorsiflexion only, and does not permit the foot to drop below a right angle with the leg. Jones and Lovett describe a less conspicuous brace consisting of two strips of steel running inside from the top of a high laced shoe to the junction of the heel and sole, where they bend at right angles and pass between the anterior half of the heel and the sole of the shoe. The uprights are joined above by a curved band of steel and are shaped to pass a little behind the malleoli and fit the contour of the leg. No joint is used at the ankle, this being unnecessary, owing to the flexibility of the sole of the shoe. The latter of these two devices is surely quite inconspicuous; it is not absolutely invisible, however, and is open to the objection that "the fastening of the sole is insecure,

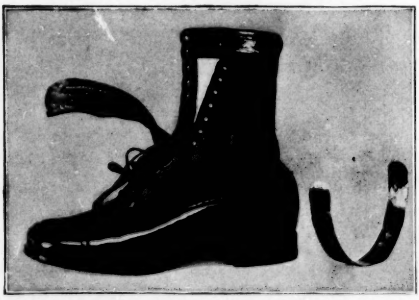


Fig. 2.—Patent leather nonorthopedic shoe modified for the drop-foot brace, showing the spring which is inserted into the tongue pocket; the cost of this modification was $1.

and after some months is apt to loosen." The braces with outside steel supports, calf bands and limited motion joints are very bulky, usually beyond the mechanical requirements of the situation, and add a psychic disability in many cases to the already existing physical disability. They also add to the existing muscular atrophy, owing to the encircling pressure of the calf band.

The simple device described here was originally devised to provide an absolutely invisible, but effective, drop-foot brace for children in whom the psychic effect of an unsightly brace was extremely depressing. The brace can be applied to any high shoe, even to white canvas shoes, with equally good results and absolute invisibility.

The principle of this brace is to support the foot at right angles to the leg, by means of a spring inserted in a pocket in the tongue of the shoe. This pocket, as shown in Figure 1, can be made by any shoemaker. It should extend from the upper margin of the tongue to the middle of the toe cap.

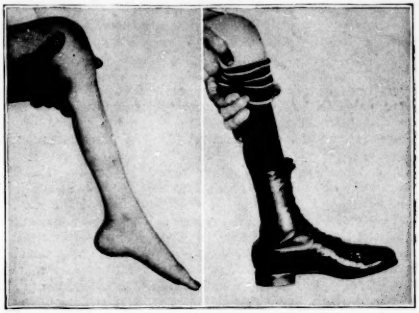


Fig. 3.—Case of paralytic equinus in a girl, aged 11, with spring brace applied to the foot, demonstrating how effectively the spring elevates the drop foot.

The posterior layer of the pocket should be padded with a lining of soft felt. The width of the pocket is determined by the width of the spring to be used. The most satisfactory spring can be obtained from various sizes of spiral steel springs, such as are used in phonographs and alarm clocks. The size and strength of the spring must be determined by the size of the foot to be supported. A small child requires only a light spring ½ inch wide and from 1/36 to 1/48 inch in thickness. Larger children require heavier springs of the type used in phonographs. The heaviest spring I have used is a phonograph spring 1 by 1/36 inch; this is shown in Figure 2. A segment of spring is cut slightly shorter than the length of the tongue pocket, with a curve with a radius considerably less than the curve of the dorsum of the foot when the latter is held at right angles to the leg. The ends of the spring are rounded off on the grindstone, and the finished spring is inserted into the tongue pocket.

When the shoe with the spring inserted is put on, the tongue is curved away from the dorsum of the foot and the leg. When the shoe now is laced, the tongue is forced firmly against the foot and the force of the spring is exerted in elevating the drop foot. The padding prevents any pressure phenomena on the dorsum of the foot. So far in my experience with this device, I have witnessed no untoward pressure results on the dorsum of the foot. The flexibility of the spring insures a thoroughly resilient and obviously light appliance.

This brace has been used in ten cases and has given very satisfactory results. It has been used both in children and in adults. Figure 3 shows the positive supporting action of the brace. In several cases in which this has been substituted for a drop-foot brace with the customary calf band, there has been an increase in the circumference of the calf of the paralyzed leg within a few months. The psychic advantages due to the invisibility of the appliance have been very marked.

It is to be understood that this device is not indicated in cases of spastic equinus or in cases in which there is a strong predominance of the gastrocnemius group of muscles. It may possibly be of service in the postoperative handling of cases in which muscle transplantation into the dorsiflexor group has been performed. Used in such cases, it will permit the

transplanted muscle to function, and at the same time protect it from excessive strain. I have used it in one such case.

CONCLUSIONS

1. This device is suitable for many cases of paralytic equinus.

2. It is inexpensive, light and invisible, and can be applied to any high shoe.

3. As it obviates lateral bars and calf bands, it eliminates pressure on the paralyzed or paretic muscles, and some muscular improvement may result from its use.

5. Particularly in girls, it possesses a marked psychic advantage over the visible braces.

6. It is not adapted to all cases of equinus; particularly it should not be used in cases in which there is an element of spasticity.

471 Park Avenue.

FOREIGN BODIES IN STOMACH

J. D. GRIFFITH, M.D., KANSAS CITY, MO.

E. F., a woman, aged 29, admitted to St. Joseph's Hospital, Aug. 25, 1923, was found on roentgen-ray examination to have foreign bodies in the stomach. On opening the abdomen, I found the stomach markedly dilated and enteroptosed. My incision through the skin had to be a large one, through the outer portion of the left rectus muscle. The stomach was completely paralyzed, so that it felt like a wet rag. On making an incision through the anterior surface parallel with the upper curvature of 3½ inches, we took out forty-three pieces of loops from spring mattress, two door hooks with staples attached, two hairpins and three or four other pieces of spring, weighing in all, about 1½ pounds. While making this extraction we had difficulty in protecting the abdomen and the incision from contamination with quantities of oatmeal and bran, which had been swallowed, although we had walled off the whole surface as best we could with gauze sponges. We found some difficulty in getting the larger hook out, as it was caught in the lower end of the esophagus. After thoroughly cleaning out the stomach, we found two small hairpins crumpled up in the pyloric end. When we began to suture the stomach, its contractile power was evidenced by pulling up our incision to 1½ inches. We closed it with three lines of sutures and one line of Lembert's suture. A Mikulicz drain was placed in the gastrohepatic area, and the abdomen was closed with three lines of sutures reenforced with silkworm gut.

Appearance of foreign bodies in stomach.

There was no postoperative nausea or vomiting. The anesthetic was gas-ether. The only vomiting at all was during the latter part of the operation, while the patient was under light anesthesia, while we were searching in the pyloric end of the stomach.

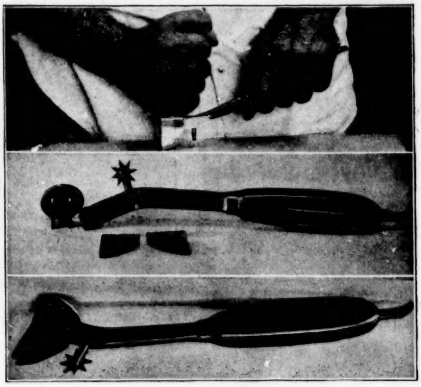
The patient made an uninterrupted recovery with the exception of two or three stitch abscesses in the upper part of the incision, which we rather expected on account of the intense soiling.

Rialto Building.

A NEW PLASTER KNIFE

HERMAN B. PHILIPS, M.D., NEW YORK

This knife is designed to facilitate the cutting down of plaster casts and comprises a handle, shaft, removable standardized blades, and a hand rest for pressure on the blades, an eight pointed revolving wheel on the under surface of the shaft, and a pick at the end of the handle. The accompanying illustration shows the parts of the knife individually and assembled for operation.



Plaster knife: above, assembled; below, individual parts.

Two knife blades operate parallel to each other at one end of the knife, with their beveled edges away from each other. They serve to cut a strip of plaster, thus obviating any possibility of jamming of the knife blades, which is a common occurrence with the usual type of plaster knife. The blades are standardized and easily replaced by unscrewing a circular knob, which holds them in position. The change of blades can be accomplished in a few seconds. The knob serves an additional purpose of permitting pressure directly over the blades, so that more effective cutting can be assured. Just back of the knife blades is a rod pointing downward, supporting a revolving, sharp pointed wheel. The wheel also serves a double purpose: first, that of cutting up the plaster strip made by the two knife blades, and second, that of affording a pivot on which the shaft of the knife operates, so that depression of the handle elevates the blades and, vice versa, the elevation of the handle depresses the blades and makes them cut deeper. At the end of the handle is a pick, which is used to pry open the plaster.

The knife has proved to be of considerable help, saving time and strength in cutting down plaster casts, in making fenestrations, etc.

ADVANTAGES

1. This plaster knife can be made to cut superficially or deeply.

2. It offers a considerable margin of safety to the patient.
3. The blades are standardized and can be very rapidly replaced in the knife.
4. The entire knife permits rapid and easy cutting down of casts.

9 West Sixty-Eighth Street.

A SPECIAL CORSET FOR SOME BACK CONDITIONS

JOHN L. PORTER, M.D., AND PHILIP LEWIN, M.D., CHICAGO

In an endeavor to obtain a simple, inconspicuous spinal support, we have found the special corset here described very satisfactory. This corset is not offered as a substitute for the Taylor spine brace. It is presented as a last stage or "assurance" support to be used in mild back cases, or after active treatment has been concluded in the severe conditions.

Fig. 1. — Steels without U-band, incorporated in corset.

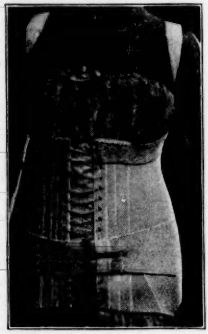


Fig. 2.—Front view of corset.

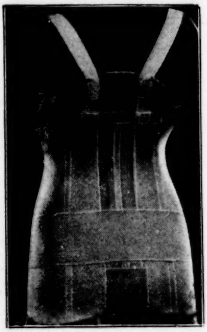


Fig. 3.—Rear view of corset.

ADVANTAGES AND USE

It has the advantage of being inconspicuous. The patients do not feel as though they are wearing a brace, their friends do not know that they have any special apparatus on, and practically every patient who has worn one has been very grateful for the support and relief that it has afforded. It has been found of great value for several years in the follow-up treatment of cured tuberculosis of the spine, osteoarthritis of the spine, fracture of the spine, scoliosis, back strain, "round shoulders," sacro-iliac conditions, poliomyelitic spine and miscellaneous conditions.

TYPES OF CORSET

The corset must be a front lace corset with a wide pelvic band and shoulder straps. When the steels have been adjusted by means of bar wrenches, they are incorporated in the corset and do not show. There is a type of corset with shoulder straps, and a type with perineal straps. The types of steel inserts include a long type with pelvic band, a short type with pelvic band, a long type with U-band, a short type with U-band, and a long type with axillary crutch and long pelvic band with an iliac rest.

CONSTRUCTION AND METHOD OF FITTING

Cold rolled steel, five-eighths by one-eighth inch, is used because it is malleable and strong. It should be nickel-plated. There are two uprights, two cross pieces and two flat round plates at the top. These plates are padded with felt and covered with leather. If a U-band is indicated, two similar plates are used below. When perineal straps are used, their ends are secured to the edges of the plates. The steels are fashioned over a plaster-of-Paris shell of the patient's back. This shell is made as follows:

With the patient lying prone, the skin of the back is moistened and the outlines of the steels are made with indelible pencil. The back is covered with a very thin layer of petrolatum, avoiding the indelible markings. Then six or seven single sheets of crinoline impregnated with plaster-of-Paris cream are applied. After ten or fifteen minutes the hardened shell is carefully removed and hung up to dry.

952 North Michigan Avenue—7 West Madison Street.

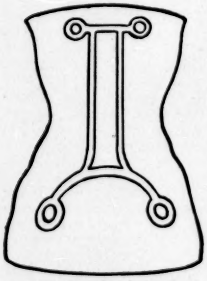


Fig. 4.—Indelible markings on inside of plaster shell.

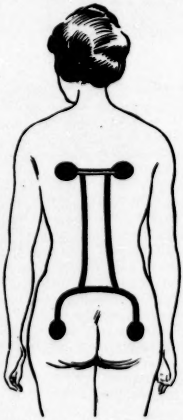


Fig. 5.—Outline of corset steels.

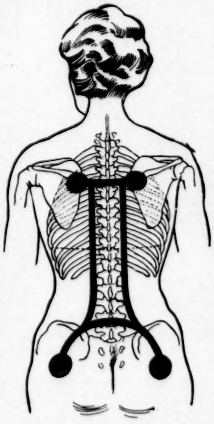


Fig. 6.—Outline of corset steels with relation to skeletal structures.

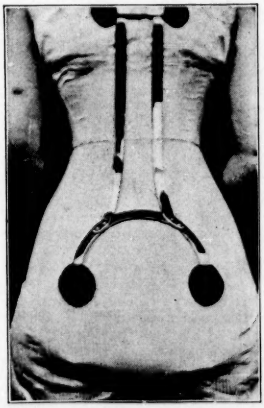


Fig. 7.—Steels held against corset.

REPORT OF A CASE OF ILLNESS AFTER TREATMENT WITH CHENOPODIUM

WITH REFERENCE TO THE POSSIBILITIES OF TOXIC EFFECTS FOLLOWING THE ADMINISTRATION OF MAGNESIUM SULPHATE *

HUGO MUENCH, M.D., NEW YORK

C. M., a colored girl, aged 6 years, of Surinam, received, April 5, 1923, her fourth treatment of 6 minims (0.36 c.c.) of oil of chenopodium. No ill effects had resulted from any of the three previous treatments. On the night preceding the fourth treatment, the child received the usual preliminary dose of magnesium sulphate, which apparently acted satisfactorily. After treatment, she received another dose of the purge. This, apparently, was vomited some time later, although the parents did not at the time inform the nurse of the fact. At 4 p. m. on the day of treatment the parents reported that the child's bowels had not moved, and the nurse administered another dose of magnesium sulphate. At 7 p. m. the child became ill, and complained of pain in the abdomen. Shortly afterward, she became comatose, with periods of confusion. The chief microscopist (formerly employed as nurse in a hospital), who was first called, found the bladder full of urine, which he expressed. He also gave a soap-suds enema, most of which was retained. The bowels had not moved up to this time (9 p. m.).

The director, who arrived at about 10:30 p. m., found the girl apparently in a condition of shock, although her pulse was fairly good and her temperature not very low. He at once administered a dose of digitalis subcutaneously. A second soap-suds enema produced no results and made the pulse appreciably weaker, besides lowering the temperature. During all this time the child was comatose, though she could be roused enough to answer questions. An injection of camphor in ether apparently revived her somewhat, and a high enema, to which had been added a small amount of magnesium sulphate, produced a little action. After this she seemed to be in slightly better condition. She was then taken to the Roman Catholic hospital, where she received a dose of camphorated oil and hot applications. From this time on, she began to improve rapidly; the bowels soon moved, and the temperature rose. When first seen, the abdomen was distended and tense. The distension disappeared completely after regular bowel action was established. For the first four days in the hospital, the urine contained albumin (at first in considerable quantity) and hyaline casts. For two or three days the patient had some fever, but she recovered quickly and left the hospital on the sixth day.

This case is reported because of the possibility that, in this instance, magnesium sulphate may have been the toxic agent. It has been the custom to make up a 25 per cent. solution of magnesium sulphate, of which the full dose is 125 c.c. The patient in question was given full doses, and thus received a little over an ounce of salts each time. Not only was this a rather large dose for a 6 year old child, but the concentration was more than the optimum.

The possibility of toxic effects occurring in the use of magnesium sulphate has apparently not been extensively considered, as very little could be found on the subject in literature. However, the following statements were discovered:

Cushny[1] declares that toxic symptoms never occur when magnesium sulphate is taken by mouth.

Hare[2] says: "Very rarely, when concentrated solutions are given to persons who are not dropsical, the drug is absorbed, does not purge, and produces systemic poisoning. Death may occur, preceded by suppression of urine and toxic convulsions followed in some cases by paralysis and not rarely by severe vomiting. Autopsy reveals patches of redness in the alimentary canal and an excess of fluid in the abdominal and other serous cavities."

Shattuck[3] says: "Toxic effects of magnesium sulphate: gastric irritation and vomiting. If given in concentrated solution it may be absorbed and may then cause severe poisoning characterized by oliguria, hematuria, slow respiration, paralysis of the intestines, extreme weakness, and collapse. The urine in poisoning shows a very high specific gravity owing to the excretion of the drug by the kidney. These effects are rare."

Unfortunately, we did not take the specific gravity of the urine of our patient. However, there were enough data to make very plausible the suspicion that the toxic effects may have been due to paralysis of the bowels by a large, concentrated dose of magnesium sulphate. This would favor the absorption of chenopodium, which would produce added toxic symptoms.

Such cases naturally would be rare, but the possibility of their occurrence must be borne in mind in intensive hookworm campaigns, in which thousands of doses of magnesium sulphate are administered. Instructions have been given the nurses to administer smaller doses of the drug to children, and either to dilute the dose with an equal amount of pure water or to have the patient drink a glass of water at the time of taking the salts.

It is well known, of course, that the negro race tends to be severely constipated. In Paramaribo, where almost the entire population is colored, there have been a number of cases of failure of the magnesium sulphate to act. This difficulty was almost unknown among the Hindustani and Javanese population of the country districts of Surinam.

61 Broadway.

* The studies and observations on which this paper is based were conducted with the support and under the auspices of the International Health Board of the Rockefeller Foundation.

1. Cushny, A. R.: Pharmacology and Therapeutics, Ed. 5, 1910.
2. Hare, H. A.: Practical Therapeutics, Ed. 15, 1914.
3. Shattuck, G. C.: Synopsis of Medical Treatment, Ed. 2, 1915.

A VALUABLE MANIPULATION FOR THE RELIEF OF CONSTIPATION

HERBERT B. WHITNEY, M.D., DENVER

About fifteen years ago, in a German publication called "Excerpta Medica," a suggestion was made for the relief of a certain form of constipation which has proved of the utmost value in my experience and practice.

Although, at the age of 65, I have been so fortunate as to have required a cathartic but twice in my life, evacuation is not always easy because of the condition of the fecal mass; and the long continued straining thus required in past years has not only been very annoying, but has also resulted in several attacks of hemorrhoids. Since the adoption of the manipulation described, such attacks have never recurred.

The procedure is applicable only to the evacuation of a fecal mass in the lower rectum, close to the anal sphincter, but hard to move because of its size, or density, or both. It consists in a remolding of the mass by external digital pressure. Sitting in the usual posture at stool, the patient, with the second and third fingers of the left hand, carried down from behind, presses with the necessary degree of force on the thin and distended tissues between the coccyx and anus, and through this on the fecal mass directly beneath. The pressure exerted is not for the purpose of expelling the mass, but solely of changing its shape; as soon as this is accomplished, the usual abdominal pressure is quickly effective. The digital pressure must always be considerable, sometimes excessive; but even the latter is both painless and harmless, and the ease and rapidity with which the favorable change of contour is effected, and evacuation follows, is often little short of marvelous.

342 Metropolitan Building.

Painless Method for Removal of Sutures.—CHARLES M. FOX, M.D., San Diego, Calif., writes: The removal of sutures, while in reality a trivial process, is often a source of great concern to the patient. For several years I have adopted the following method for the removal of silkworm-gut skin sutures with the most gratifying results: The suture is cut in the usual way but is not pulled out, being left in situ. In a few days (from one to three), the sutures all fall out with the removal of the dressing. Figure-of-eight or deep tension sutures will straighten out and loosen within forty-eight hours so that they may be removed by a slight pull and with no sensation whatever on the part of the patient. This method is particularly applicable to nervous patients or patients with sutures in sensitive tissues.

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SATURDAY, JANUARY 5, 1924

DEATHS OF PHYSICIANS IN 1923

During 1923, the deaths of 2,570 physicians in the United States were recorded in THE JOURNAL. Adding 2 per cent. to this number on account of delayed reports and possible omissions, we estimate the total number of deaths as 2,621. On an estimate of 146,000 physicians in the United States, this is equivalent to an annual death rate of 17.95 per thousand. The rate for 1922 was 17.73 per thousand.

Ages.—Of the 2,557 decedents whose age was stated, forty were under 30; 144 between 31 and 40; 373 between 41 and 50; 532 between 51 and 60; 703 between 61 and 70; 513 between 71 and 80; 218 between 81 and 90; thirty-three between 91 and 100, and one lived to the age of 102. The greatest number of deaths for a given age occurred at 68 years, at which age seventy-nine deaths were noted.

Causes of Death.—Of the 2,534 known causes of death, 559 were diseases of the heart and circulatory system; 160 were carcinoma and sarcoma; 72, tuberculosis; 38, diabetes mellitus; 37, septicemia; 22, acute anemia; 5, typhoid, and 1, beriberi. Cerebral hemorrhage caused 260 deaths; general paralysis, 11; meningitis, 10; neuritis, 7; epidemic (lethargic) encephalitis, 10; brain tumors, 3, and other diseases of the nervous system, 26. Pneumonia claimed 161 victims; bronchitis, 71; influenza, 53, and other diseases of the respiratory system, 20. Appendicitis caused 30 deaths; gallstones, 18; cirrhosis of the liver, 15; strangulated hernia, 12; acute indigestion, 14; biliary calculi, 6, and other diseases of the digestive system, 52. Chronic nephritis accounted for 100; uremia, 30, and other diseases of the genito-urinary system, 21. Various diseases of bone caused 6 deaths; senility, 422; sequels to operations, 119. The remaining deaths were due to causes not specified.

Accident and Homicide.—The causes and distribution of the 126 deaths from accident and homicide were: automobile, 59; automobile-railway (grade crossing), 20; drowning, 10; firearms, 9; falls, 7; aeroplane, 2; asphyxiation, 2; poison, 2; earthquake, 1; horse, 1; electrocution, 1, and being shot by bandits or maniacal patients, 12.

Suicide.—The sixty-three physicians who ended their lives by suicide selected these methods: firearms, 24; poison, 15; asphyxiation, 5; cutting instruments, 4; jumping from high places, 4; drowning, 3, and 8 unknown.

Civil Positions.—Among the decedents who held civil positions, three had been U. S. consuls; two had been state governors; 53 former members of the state legislature; 33, mayors of cities; 86, members of boards of health; 36, members of boards of education; 17, members of state boards of medical examiners; 29, coroners; 5, postmasters, and 5, police commissioners. There were 145 veterans of the World War; 115, veterans of the Civil War; 22, of the Spanish American War, and 1, of the Franco-Prussian War; 8 had been bank presidents; 5, clergymen, and 3, missionaries. There were also one former vice president of the American Medical Association, and twenty former presidents of state medical associations.

INTERVERTEBRAL COMPRESSION OF THE SPINAL NERVES

It has sometimes, unjustly, been alleged that physicians have paid too little attention to compression of the spinal nerves in the intervertebral canals and foramina as a cause of symptoms. Probably the most fruitful studies of this difficult subject have been made by French investigators who have outlined types of vertebral disease and the syndromes connected with them. The investigations of the intervertebral canals in the living subject, even with the aid of the roentgen rays, is extremely difficult, owing to the complexity of bony processes in their vicinity and the variation in the direction of the canals at different levels of the spinal column. The interpretation of roentgenograms is correspondingly liable to error and has proved of little practical value. There has also been a tendency on the part of neurologists to explain all symptoms that indicate affection of spinal roots by involvement of the roots in inflammation of the dura.

Sicard, in particular, has done much to throw light on this obscure problem, and some time ago described a condition of inflammation of that portion of the spinal root that lies within the intervertebral canal under the name funiculitis. This was distinguished from radiculitis, which is an affection of the intradural portion of the root that lies between the spinal cord and the intervertebral canal, and also from involvement of the trunk of the nerve root that extends from the foramen to the nerve plexus. The funicular portion of the root, lying within the channel between the vertebrae, is outside the dura mater and is embedded in a mass of "adiposocellular" tissue, which is continuous with the fatty layer that surrounds the dura beneath the bones

and ligaments, and constitutes the so-called epidural space. In 1901, Sicard and Cathelin introduced the method of epidural injection of cocain in the treatment of intractable sciatica and other pains, entering this space through the sacrococcygeal joint. Recently, Forestier,[1] a pupil of Sicard, has published a monograph in which are detailed the results of extensive research, both anatomic and clinical, on the funicular portion of the spinal nerves. He describes a technic by means of which he has succeeded in injecting the epidural space by inserting the needle between laminae in the lumbar and dorsal regions. Using a radiopaque solution of iodin in a vegetable oil, which is said to produce no tissue reaction and to be entirely harmless, he has succeeded in securing roentgenograms that demonstrate the dispersion of the injected fluid through the epidural space and thus the presence or absence of obstruction in the space. Obstruction had been observed only in one case of Pott's disease and another of medullary tumor; in cases of chronic "rheumatic" affection and various forms of spondylitis and spondylosis, the injected fluid spread freely. Since then, Sicard and Forestier have recorded[2] the finding of obstruction in numerous cases of tuberculous and carcinomatous disease of the vertebrae.

Swelling of the epidural adiposocellular tissue, however, has been observed directly at operations, and its presence has been deduced from the condition of the spinal fluid, in patients with chronic lumbago and sciatica. As was pointed out by Sicard and Foix in 1910, the spinal fluid in funiculitis contains an increased amount of albumin without pleocytosis. This dissociation distinguishes the fluid from that in meningitis, in which both the albumin and the cell content are increased. The increase of albumin in funiculitis is explained as the result of interference with fluid circulation from compression of the venous and lymphatic vessels in the intervertebral canals.

Some of the conclusions reached by Forestier are of particular interest in connection with the much exploited intervertebral compression of spinal nerves. He points out that compression of the nerves and other structures within the canal gives rise to a definite syndrome: local pain, spontaneous or provoked by movements of the vertebral joints, and accompanied by visible and palpable rigidity of the spinal muscles, with limitation of movement and altered posture; neuralgic pain radiating into peripheral parts that is influenced by movements of the trunk and limbs and also by coughing; objective sensory disturbances that are often absent, and consist rarely of hyperesthesia, more commonly of hypesthesia to pin-pricks in the area of skin corresponding to the root affected; rarely motor symptoms, which are always slight and include diminution of power and clumsiness of movement; alteration of tendon reflexes, most often, in the lower extremities, in the direction of exaggeration, less commonly diminution. Vasomotor and pilomotor disturbances have not as yet been observed. To these must be added the changes in the spinal fluid already described.

Perhaps even more significant is the conclusion reached concerning the effects of movements of the vertebrae on the size of the intervertebral canals. Sliding of the articular surfaces on one another results in an actual enlargement of the canal and it is not until the upper articular process passes over the summit of the lower one, that is to say, until complete dislocation occurs, that compression of the contents of the canal will be produced. Furthermore, such displacement will at once "crush the contents of the intervertebral canal, which becomes *reduced to a merely potential space.*" The consequences must inevitably be complete interruption of nerve function with loss of sensation and paralysis of muscles corresponding to the distribution of the root involved.

These observations, which are incidental to the purpose of Forestier's investigations, establish clearly the conditions under which compression of the spinal nerves will occur and the symptoms that follow from such compression. They leave no room for speculation, exaggeration or exploitation.

1. Forestier, Jacques: Le trou de conjugaison vertébral et l'espace épidural, Paris, Jouve & Co., 1922.
2. Sicard and Forestier: L'huile iodée en clinique, Bull. et mém. Soc. méd. d. hôp. de Paris **42**: 309 (Feb. 23) 1923.

SOME NEW LINES OF PROGRESS IN CANCER RESEARCH

When Yamagiwa and Ichikawa succeeded in producing cancers on the ears of rabbits by protracted painting with tar, they inaugurated what promises to be one of the most important advances yet made in the study of malignant disease. Their results showed the way to produce true primary carcinoma at will in experimental animals, opening up an entirely new field for cancer research. The rabbit, which the Japanese investigators selected as their experimental animal, happens to be a species of low susceptibility to spontaneous cancer, whereby their successful results, though few, were particularly convincing, since coincident occurrence of natural cancer, not depending on the experimental procedure, could be excluded. Later studies with more susceptible animals, especially mice, have shown a very high proportion of cancer production in treated animals. The fact that sometimes sarcoma rather than carcinoma results is important, as indicating that the two classes of malignant growths have a common pathogenesis.

In a discussion of his observations in experimental cancer production at the International Cancer Congress at Strasbourg last summer, Murray,[1] the director of the Imperial Cancer Research Fund of London, called attention to the significance of the fact that in the production of experimental tar cancer a long period of

1. Murray, J. A.: Primary and Secondary Resistance to the Induction of Cancer, Lancet **2**: 159 (July 28) 1923.

treatment is necessary before malignant proliferation results, for this harmonizes perfectly with the chronic character of the irritations that are usually necessary to produce cancer in man. In mice, the tar cancer is not produced in less than three months, usually from six to nine months being required, which is a large proportion of the span of life of these animals; and even eighteen months of biweekly application of tar may fail to induce cancer formation, showing that there is a marked difference in resistance or susceptibility of different mice to the production of malignant growth. It would seem highly probable, in view of what has been shown concerning the influence of heredity on the spontaneous occurrence of tumors in mice, especially by Loeb and by Slye,[2] that this factor accounts for the difference in behavior of different mice under the same stimulus to cancer formation.

Again, as with human cancer production, excessive injury to the tissues is less likely to lead to cancer formation than a milder stimulation without destruction; for example, roentgen-ray and radium burns are less likely to be the site of cancer than areas of milder but protracted irritation. Sometimes a combination of tissue traumatism with the stimulation of cell growth by tar has been found to accelerate the production of the neoplasm. This fact is particularly important in view of the observations of Drew on the behavior of tissue cultures of normal and cancer cells. It has been known by investigators in this field that tumor cells exhibit the peculiarity, shown by embryonic tissues, of being able to begin to proliferate almost immediately when placed in a suitable culture medium, whereas quiescent adult tissue cells do not begin to grow until after a comparatively prolonged interval. Furthermore, when to such adult cells in cultures is added the extract of slightly autolyzed normal tissues, they show a speed of growth similar to that of tumor cells. Extracts made at 0 C., that is, without autolysis, have no such stimulating effect; but Drew found that even cold extracts made from cancer tissue have the same stimulating property as the extracts of autolyzed normal tissues. Murray considers that from these observations, many times repeated and always with the same result, it is probable that these malignant growths produce continuously, of their own accord, growth-stimulating substances which normal tissues elaborate only in response to cell damage. A direct relation exists between the growth-stimulating power of the tumor extracts and the rate of growth of the tumor used to prepare it. This suggests strongly that the biochemical mechanism by which their proliferation is maintained is, at any rate in part, by the elaboration of this growth-activating substance or substances. A certain amount of activating substance is probably produced by any kind of cell damage, and when by constant repetition this production has become automatic, proliferation will continue after removal of the cause of protoplasmic disintegration. Temporary hypertrophies would, in this conception, correspond to the purely reactive production of activator, ceasing when the irritant is removed, benign growth to an autonomous production in small amount, and malignant growth to a more abundant production. Apparently in cancer formation the cells acquire the property of producing continuously and in relatively large amounts the same sort of stimulating substance that adult tissues produce or release only when injured and for the purpose of exciting reparative processes. Embryonic tissues, like cancer cells, also produce the growth-stimulating substance. In support of this conception of the pathogenesis of cancer growth is the observation of Deelman that previous traumatism of the tissues, which might set free growth-promoting substances, hastens the production of tar cancer.

Murray found that after a tar cancer has begun to grow, subsequent application of tar at another point usually fails to produce a new focus of cancer development. Similar negative results of tar painting in animals from which primary spontaneous mammary gland tumors had been removed by operation support the hypothesis that the presence in an animal of a cancer has some systemic influence that inhibits cancer formation elsewhere. As yet, the number of experiments on this point are too few to establish positively so important a matter as this, especially in view of the contradictory fact that multiple primary spontaneous tumors are remarkably common in laboratory mice, and by no means extremely rare in man. But at least the numerous new facts and suggestions brought forward by Murray serve to emphasize the great possibilities the new methods of cancer investigation have for adding rapidly to our understanding of the underlying principles of cancer pathogenesis.

2. Reviewed by Wells, H. G.: The Influence of Heredity on the Occurrence of Cancer, J. A. M. A. 81: 1017 (Sept. 22), 1103 (Sept. 29) 1923.

Current Comment

TYPHOID FEVER

One advantage of the generally low typhoid level in the United States is the relative ease and rapidity with which any excess over the normal may be detected. In New York City ten cases occurred among the employees of a single hospital during the last week in October. Not a patient in the institution succumbed to the disease. It was relatively simple to trace the cause of the outbreak directly to a carrier of the disease employed as a kitchen helper in the kitchen from which the food of employees was served. One hundred cases of typhoid would not have made much stir in Chicago thirty or even twenty years ago. Today an outbreak of relatively small dimensions is rightly made the object of searching inquiry. So far as has been determined, the recent outbreak was limited essentially to the section

of the city supplied with water from the Sixty-Eighth Street crib, and bore all the marks of a water-borne epidemic. Some surprise may be occasioned that the epidemic was attributed to water, since for some years past Chicago, like most large American cities, has utilized the method of water chlorination as a safeguard against the pollution to which a surface water is always liable. Whether the infectivity of the water from the Sixty-Eighth Street pumping station was due to excessive pollution of the water at the intake, coupled with insufficient chlorination, to direct sewage contamination at or near the pumping station itself or to some other factor does not appear to have been established. It may be recalled that a localized epidemic of typhoid of about the same dimensions as the recent one occurred in Chicago in February, 1916; this outbreak likewise had the same distribution as the water from the Sixty-Eighth Street pumping station; it was attributed to the breaking-up of a sewer in the basement of the pumping station following a heavy rainfall, and the consequent contamination of one of the suction wells from which water was pumped.

MELANURIA

Medicine has long known a variety of anomalies in man that have usually been regarded as rare occurrences. Presently some circumstance has directed attention to one or another of these conspicuous cases so that they have become the subject of serious scientific investigation, revealing unexpected interest in the problem presented and assigning special importance to a more profound understanding of it. The Stokes-Adams syndrome affords a characteristic illustration. It was known and described with considerable accuracy for more than half a century before physiologic studies on the auriculoventricular mechanism of the cardiac tissues presented the manifestations of clinical heart block in a new light. Growing interest in the scientific aspects of the subject soon led to the discovery that the Stokes-Adams syndrome is by no means so uncommon as physicians were formerly allowed to believe. The laboratory and the clinic have consequently been spurred to activity in an elaborate investigation of a once supposedly rare disease. It seems likely that some of the chemical anomalies of the organism, particularly some of the striking perversions of metabolism, will be found to occur more widely than has heretofore been believed, and consequently more precise information may be expected to become available. Cystinuria, alkaptonuria and pentosuria have already acquired more than minor importance. Perhaps melanuria is destined soon to experience a revival of interest and new progress in its interpretation. Black pigments occur in various parts of the body, notably the hair and choroid coat of the eye. The idea is prevalent that melanin arises through the metabolic activity of special cells. Occasionally, melanin appears in the urine of man. It happens that numerous instances have been recorded in which melanuria has occurred simultaneously with melanotic tumors, and the excretion of the characteristic dark pigment has been looked on as pathognomonic of this type of neoplasm. Peters[1] of the Yale University School of Medicine has furnished the first conclusive evidence, we believe, indicating that melanuria can occur in the absence of melanotic sarcoma. The quantities of excreted pigment found in his case were so large that, in the absence of demonstrable abnormal melanotic growths, an excessive production of melanin must be assumed, the source of which remained undiscovered. It will now be in order again to inquire more intently whether all melanin-like pigments in man are really alike or have a common origin, whether they are derived from the iron-containing blood pigment or from some amino-acid fragment of other proteins, and how. And while the laboratory worker is giving new energy to the elucidation of the questions, the clinician is likely to be more alert toward the discovery of new cases of melanuria.

THE TOXEMIA OF SUPERFICIAL BURNS

Why superficial burns should so often give rise to untoward effects that seem to be out of all proportion to the actual area or extent of apparent damage to the body has long been a puzzle. Traumatisms of various sorts may be attended with injury to or even complete loss of considerable masses of tissue without serious outcome, whereas burns of far smaller quantities of skin are often followed by most serious consequences. The current theories of the cause of death from superficial burns have included shock, hemorrhage and toxemia. However significant the first two of these may be in certain instances, they cannot account for the symptoms that have been observed when fragments of burned skin are transplanted to a normal animal. The latter may exhibit the effects of toxemia, while the burned animal may be saved by the removal of the damaged cutaneous tissues. Such experiences point to the probability that some sort of deleterious agent is generated in the skin damaged by heat. Toxic substances have therefore been sought assiduously in the excretions, in the blood and in the tissues of victims of burns. Were the agent to be discovered, the prospect of helpful therapy would be greatly improved. Some investigators have concluded that proteins not ordinarily in circulation are liberated from burned areas, so that when they thus become distributed, anaphylactic phenomena may ensue comparable to the effects of "foreign" proteins in general. A long list of alleged toxic products generated in burns has been proposed in the course of the years. In studies at the Hospital for Sick Children in Toronto, Robertson and Boyd[2] have concluded that death from burning occurring within the first twenty-four hours is almost always due to primary shock; later than this, it is due to toxic shock. There is a toxin produced in burned tissue, in larger quantities in skin burns, which circulates in the blood, either in, or adsorbed by, the red blood corpuscles, which causes the symptoms seen in bad superficial burns, and in some cases death. Extracts of burned skin are toxic. Extracts of skin burned post mortem are innocuous. There is increased protein catabolism in burns, as evi-

1. Peters, J. P.: Melanuria Without Melanosarcoma, Arch. Int. Med. **32**: 709 (Nov.) 1923.
2. Robertson, B., and Boyd, Gladys L.: The Toxemia of Severe Superficial Burns, J. Lab. & Clin. Med. **9**: 1 (Oct.) 1923.

denced by the increase in the nonprotein nitrogen and urea nitrogen of the blood. Attempts to produce antibodies against the burn toxin have thus far failed. The Toronto investigators believe that the latter partakes of the nature of a proteose. These findings do not bring us much nearer to a successful scheme for antitoxic treatment. In this connection, however, it is important to remember Underhill's discovery of the tendency to anhydremia associated with extensive superficial burns. The assiduous effort to prevent undue concentration of the blood in burns must remain for the present one of the most important of the limited therapeutic measures available for relief.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Chiropractor Held.—According to reports, W. E. Purviance, chiropractor of Los Angeles, was recently arrested on a statutory charge, preferred by the mother of Mary Schwaln.

Hospital Association Organized.—The San Francisco Bay Counties Hospital Association was organized, December 6, in San Francisco, with Dr. Lionel S. Schmitt, director of hospitals, University of California, as president, and Dr. Attilio S. Musante of St. Joseph's Hospital, temporary secretary.

Society for Blind Organized.—The California Society for the Blind was organized, Nov. 8, 1923, with Dr. Edward F. Glaser as president. The immediate projects of the society are: the organization of a campaign for the prevention of blindness; the establishment of a nursery and kindergarten for blind children of preschool age; the securing of more adequate provision for the education of intelligent blind children and for the proper care of the feebleminded blind; more adequate provision for the indigent and helpless blind; the establishment of special wards for eye cases in the larger hospitals of the state; definite assurance of the continuation of home teaching for the adult blind; the development of vocational training and education of the blind, and the establishment of a placement agency for blind persons who are endeavoring to become self-supporting.

CONNECTICUT

Naturopathic Board Acts.—The license of Louis J. Blumer, head of the Blumer College of Naturopathy, Hartford (THE JOURNAL, Dec. 15, 1923, p. 2038), as a naturopathic physician, was revoked, December 11, by the state board of naturopathic examiners. At the same time Judge Marwin summoned Franklin R. Coombs, New Britain, president of the board, and his two colleagues to a hearing in the superior court to show why a temporary injunction should not be issued restraining the board from revoking Blumer's license.

Eclectic Examinations Again Postponed.—Connecticut's statutory eclectic examinations, scheduled for December 11, by the state eclectic medical board of examiners, were again postponed indefinitely. Dr. James E. Hair, Bridgeport, secretary of the board, stated that no more examinations would be held until certain schools "have been cleared of any suspicion of being diploma mills." The applications of about twenty-five holding diplomas from the St. Louis and Kansas City schools and the Middlesex College of Physicians and Surgeons, Cambridge, Mass., haye been placed on file.——In a communication from the National Eclectic Medical Association to the Connecticut Medical Eclectic Association, December 12, it was threatened to expel that association from the national body. The message, according to reports, denounces the state eclectic examining board for its laxity in passing improperly qualified men and demands that all such should be stricken from the rolls.

Diploma Inquiry Continued.—According to reports, Dr. Frank Webb, Bridgeport, one of the twenty-five "physicians" whose license was revoked by the special grand jury, recently, returned his license to the state department of health, December 7. He is one of the very few of the total of twenty-five revoked that has done so. It is stated that the list of subpenaed witnesses for the reopening of the special grand jury, January 2, was fully as large as the previous list. During the last sitting, a period of three weeks, forty witnesses were questioned and a great deal of documentary evidence examined. Two Willimantic physicians have had summonses served on them, Dr. William D. MacCormack, with a diploma from the Kansas City College of Medicine and Surgery (who states that his records were practically all lost in a fire that occurred, Oct. 21, 1923, in the home of Dr. E. H. Marsh, who died last April, where MacCormack had his office), and Dr. Samuel J. Turcotte, who holds a diploma from the Middlesex College of Medicine and Surgery, Cambridge, Mass., 1921. He passed the examinations of the Connecticut Eclectic Medical Examining Board in November, 1922, and took over the practice of Dr. John Weldon of Willimantic, who died in February, 1922.

DELAWARE

The Lincoln "University."—Disclosure of an alleged "diploma mill" with headquarters in Wilmington (THE JOURNAL, Dec. 29, 1923, p. 2192), known as "Lincoln University Inc.," has recently been made. This "university" purports to offer degrees in medicine, dentistry, theology, law, literature, engineering, pharmacy, psychology, mental therapy, philosophy and other subjects, from correspondence courses and for a fee as low as $100. Complaint that the "university" was using the mails to defraud was made to the Philadelphia postal authorities by Dr. Alexander Reynolds, secretary of the Pennsylvania State Board of Dental Examiners, according to reports. Maxwell Steinberg, D.D.S. and Ph.D., is president of the Lincoln "University" with headquarters at 832 Market Street, Wilmington (address on stationery of the "university"). But on investigation, it was found that there is no "university," or anything resembling a college, school, or clinic at the address given. It is the office of Franklin Mettler "corporation organizer" who admits, it is stated, to being the legal representative of the Lincoln University Inc., and as such performs such services as receiving mail and forwarding it to what he said is the real scene of the "university's" operations in New York, 1263 Broadway being the address given. This is not the "university's" address and never has been, according to the occupants of that building. "Dr." Maxwell Steinberg, president and chief incorporator of the "university" appears in the New York telephone directory as a chiropractor, 544 Dumont Avenue, Brooklyn. At this address there is a huge sign announcing Dr. Steinberg as a dentist. On his walls was a diploma giving him the degree of doctor of dental surgery, issued by the Oriental University, Washington, D. C., June 6, 1921. There was another degree issued by "Oskaloosa College," Iowa, entitling Steinberg to the degree of "doctor of philosophy." "Dr." Steinberg was "out" when the investigator called. The Delaware charter granted to Steinberg and his associates, Hannah Steinberg and George M. Anton, New York, permits Lincoln "University" to issue degrees in almost any science. Appended is a certification by Charles E. Hughes, Secretary of State, attesting the seal of the Secretary of the State of Delaware. Steinberg, in choosing a name for his "educational" institution, stumbled on the one which has been in use for nearly forty years by a negro college in Chester County, Pa., Lincoln University. There is no connection between this institution and the corporation chartered by Steinberg. Investigation was started, it is reported, when Luis Martin Valbuena, a Venezuelan, who came to the United States to take a course in dentistry, was granted a degree in dentistry by Lincoln "University." There was some difficulty about its acceptance in Venezuela so Steinberg wrote to the Venezuelan consul in New York requesting him to visé his signature as president of Lincoln "University," "a chartered institution of higher learning in the State of Delaware." Through the consul, notice of this was brought to Dr. Reynolds, who advised against the visé. Dr. Reynolds then induced a friends in San Juan, Porto Rico, to write to Lincoln University, regarding its course in dentistry. The reply, signed by Steinberg, offered a correspondence course "leading to the D.D.S. degree for $100, paid in advance, or if paid by instalment, with 20 per cent. additional charge." Later news announces the arrest of "Dr." Maxwell Steinberg, who admitted, it is reported, a brief connection with the "university."

DISTRICT OF COLUMBIA

Howard University.—In the report of the president of Howard University to the Secretary of War for the fiscal year ending June 30, 1923, it was said that an additional income of $25,000 yearly, in addition to tuition fees, is necessary in order that the medical school may still retain its Class A standing. An endowment campaign was successfully carried out this year, the university raising $250,000 by subscription, and the General Education Board giving an equal amount. The present buildings are old, dating from 1869, and wholly inadequate, necessitating limiting the classes to fifty This is a serious limitation, the report states, as at least 350 graduates are needed each year to care for the colored population. The registration for 1922-1923 was 222 medical students. Degrees were conferred on twenty-seven.

The Oriental University Again.—The fraud order recently issued against the Oriental University, Washington, and its president, Helmuth P. Holler (whose license has been revoked), has been extended by the Postmaster General to cover the "Prexerana Community" and Mrs. L. Vest Holler, at Poplars, Md. This action was ordered on the ground that recent activities of those named in the first order are "manifestly an attempt to evade the effect of that order." After the first fraud order was issued, according to postal officials, Oriental University mailed a circular letter at Owings, Md., asking prospective patrons to address it at Prexerana Community, Poplars, Md., and to omit the name of "President Holler." In the same letter, patrons were told to make all payments due to Mrs. L. Vest Holler, "our treasurer." According to later reports, Oriental University's charter has been revoked.

FLORIDA

Hospital Sold.—The Marvin-Smith Hospital, Jacksonville, has been purchased for $65,000 by the Jacksonville Hospital Association of which Dr. H. H. Humphreys is president.

Health Pageant.—A pageant entitled "Be Fit, America," was conducted at the race track in Jacksonville, November 15, to emphasize the nutrition program of the National Child Health Committee and the Parent Teachers' Association. More than 1,000 children took part in the production.

GEORGIA

Clinics for General Practitioners.—The Post Graduate Clinic for General Practitioners, the first of its kind given in the South, the *Journal of the Medical Association of Georgia* states, was held at the Macon Hospital, Macon, under the auspices of the Bibb County Medical Society, November 5-10.

Personal.—At a recent election Dr. Raymond L. Johnson was chosen to head the medical staff of the King's Daughters Hospital, Waycross; Dr. Daniel M. Bradley was chosen vice president, and Dr. George N. MacDonell, secretary.——Dr. Marvin F. Haygood has resigned from the state board of health and will locate in Atlanta.——Dr. Edson W. Glidden, Jr., superintendent of the State Tuberculosis Sanatorium, Alto, was recently elected president of the Georgia Tuberculosis Association.——Dr. Emery C. Herman has been elected city physician of La Grange to succeed Dr. Edwin C. Thomas who has moved to Miami, Fla.——Dr. George L. Chapman, Milledgeville, has been appointed county health officer to succeed Dr. Henry D. Allen, Jr., who has resigned.

ILLINOIS

Hospital News.—The Globe Hospital, Freeport, has been purchased by the Deaconess Society of the Evangelical Church of the United States, which will take charge immediately, and renovate the institution.

Illinois in "Diploma Mill" Intrigue.—In a letter from C. A. Lewis, editor of the *Pharmaceutical Era*, to the Postmaster General, recently, he stated, it is reported, that they have reliable information that the Lincoln-Jefferson University, 64 West Randolph Street, and the National University of Sciences, 2923 South Michigan Avenue, Chicago (run by a "Dr." C. C. Faiman, listed in the Chicago telephone book as an osteopath), peddle diplomas in medicine, pharmacy, osteopathy and dentistry to "graduates" of correspondence courses. Following this information the director of the Illinois State Department of Registration and Education, December 28, began an investigation into the activities of these alleged "diploma mills."

Chicago

University News.—It was announced, December 28, by the directors of the Rockefeller Foundation, New York, that the University of Chicago Medical School would be one of the four medical colleges to share their $2,725,000 appropriation. Other colleges that will share in this gift are the medical colleges of the University of Iowa, the University of Toronto and the University of Alberta, Canada. Endowment and appropriations granted by the foundation, for 1924, now total $10,500,000.

State Insane Asylum Burns.—Nineteen lives were lost, December 26, when the tuberculosis pavilion at the Dunning State Asylum burned to the ground. Some of the inmates escaped and are still at large. The building which burned housed between 600 and 700 patients. There are in all about 3,500 patients at the asylum. This was the eighth fire at Dunning in thirteen years.

Dr. Brophy's Gift for Students.—Dr. Truman W. Brophy has donated property valued at $50,000 on Congress and Wood streets, on which to build a twelve story dormitory and activities building for west side medical, dental and pharmacy students of the Y. M. C. A. Dr. Brophy is president of the Chicago College of Dental Surgery.

Personal.—Prof. James H. Breasted, Ph.D., of the University of Chicago, left, Dec. 27, 1923, for Egypt, where he will participate in the further exploration of the tomb of Tut-Ankh-Amen. He will spend the winter in Egypt, and in the spring will deliver the Schweich lecture at the British Academy, the first American thus honored.

Society News.—A joint meeting of the Chicago Laryngological and Otological Society and the Chicago Roentgen Society will be held, January 7, at the Auditorium Hotel.

IOWA

Personal.—Dr. Don M. Griswold, professor of preventive medicine and hygiene at the University of Iowa has been appointed director of the public health summer school which will be held at the university, with the cooperation of the U. S. Public Health Service.

KANSAS

Personal.—Dr. John L. Lattimore, Topeka, has been elected president of the Kansas Medical Laboratories Association.——Dr. Edwin C. Morgan, Clay Center, was elected first president of the Rotary Club recently organized in that city.

LOUISIANA

Personal.—Dr. Oscar Dowling, president of the state board of health, read a paper on "What Medical Science Has Done for Public Health," Dec. 28, 1923, before the section of social and economic science (K) of the American Association for the Advancement of Science, in Cincinnati.

Parish Medical Societies Elect.—New officers recently elected for the Orleans Parish Medical Society are: president, Dr. Stanford Chaille Jamison; vice presidents, Drs. Urban Maes, Maurice J. Gelpi and Edward P. A. Ficklen; secretary, Dr. Lucien A. LeDoux, and treasurer, Dr. John A. Lanford.——At the special meeting in Natchitoches, Dec. 21, 1923, the parish medical society reelected all the officers as follows: president, Dr. William F. Sibley; vice president, Dr. J. Bennett Pratt, and secretary-manager, Dr. William W. Knipmeyer.

Leper Case Probed.—Dr. Hugh S. Cumming, Surgeon General of the U. S. Public Health Service, has gone to New Orleans to personally investigate the "leper situation," regarding the trial of George Beaurepaire, negro leper, on a charge of murdering his wife. District Attorney Marr states that at best only a verdict of life imprisonment could be reached and the man is already condemned to life isolation by his disease, but Dr. Dowling, president of the state board of health, states that a trial is necessary if the discipline and morale of the leper's home is to be maintained. The question of trying a leper on a murder count has given rise to an unusual situation. State authorities objected to the trial on the grounds that the court, jury, attorneys and spectators would be subjected to the danger of infection by leprosy. Dr. Dowling then suggested that the leper be tried in a glass cage equipped so as to enable the man to hear and answer questions but this project has since been abandoned.

MARYLAND

Hospital News.—Dr. W. Rushner White, superintendent of Patapsco Manor Sanitarium, Ellicott City, is having plans drawn for rebuilding the sanatorium, which was destroyed by fire, recently. The new building wi' cost $30,000.

Memorial for Dr. Herbert Harlan.—A committee has been selected from among the members of the Medical and Chirurgical Faculty of Maryland to raise a fund for a suitable memorial to Dr. Herbert Harlan, late president of the faculty and a president of the state board of medical examiners for nearly a quarter of a century. Every member of the faculty has been asked to make a contribution not to exceed $5.

Personal.—Dr. Bromwell Branch of the Hunan-Yale College of Medicine, Changsha, China, formerly a resident of Maryland, is doing graduate work at the Johns Hopkins Hospital.——Frederick P. Keppel, president of the Carnegie Corporation, lectured on "City and Regional Planning in Their Relation to Public Health," at the Johns Hopkins School of Hygiene and Public Health, December 17.——Dr. Frederick C. Robbins, U. S. Veterans' Hospital No. 42, Perryville, has been appointed superintendent of the State Hospital for the Insane, Norristown, Pa.

MASSACHUSETTS

Lecture on Vivisection.—Ernest Harold Baynes, field secretary of the "Friends of Medical Progress," lectured recently under the auspices of the Household Nursing Association, Boston, on "Vivisection and Modern Miracles."

Hospital News.—At the recent opening of the Clover Hill hospital, Lawrence, addresses were made by Dr. Frank M. Lahey, clinical professor of surgery, Harvard Medical School, on "Surgery of the Gallbladder," Dr. Franklin W. White, on "Nonsurgical Drainage of the Gallbladder," and Dr. Arthur R. Kimpton, on "Abdominal Surgery."

Association for Prevention of Heart Disease.—The Boston Association for the Prevention and Relief of Heart Disease is sending out a form letter and a folder to physicians, giving statistical information relating to heart disease and detailing the causes and methods of prevention, requesting that they become members and explaining the work of the organization. The annual membership is $3.

MICHIGAN

State Board of Registration in Medicine.—Governor Groesbeck made the following appointments to the state board of registration in medicine at Lansing, December 22: Drs. Frank A. Kelly, Detroit; Jacob D. Brook, Grandville, and Hugh A. Stewart, Flint, whose terms had expired, were reappointed; Dr. Alfred W. Hornbogen, Marquette, to succeed Dr. Duncan A. Cameron, Alpena, and Dr. Henry M. Joy, Calumet to succeed Dr. Arthur L. Robinson, Allegan.

Northwestern Michigan Clinical Society.—At the annual meeting of the society in Cadillac, December 19, the following officers were elected for the ensuing year: president, Dr. Frank Holdsworth; vice president, Dr. James W. Gauntlett, and secretary-treasurer, Dr. Fred G. Swartz. All the new officers are of Traverse City. Dr. Richard M. Olin, state health officer, and Dr. Clyde C. Slemons, health officer of Grand Rapids, gave addresses. Physicians and nurses from the state department of health now conducting a goiter survey in that county were guests of the society.

MINNESOTA

St. Paul Clinic Week.—The fourth annual St. Paul Clinic Week will be held from January 15 to 18. Clinics will be held at the various hospitals each morning during the session. The afternoons will be devoted to the following symposiums: Tuesday, "Intestinal Obstruction"; Wednesday, "Life Insurance"; Thursday, "Irregularities of the Heart"; Friday, "Etiology and Diagnosis of Diseases of the Kidney and Ureter"; also a diagnostic clinic on diseases of the prostate, by Dr. William F. Braasch, Rochester. Thursday evening, Dr. George E. Shambaugh, Chicago, will address the annual banquet of the Minnesota Academy of Ophthalmology and Otolaryngology.

MISSOURI

Dr. Adcox Faces Trial.—An indictment charging Dr. Robert Adcox (who it is alleged, was clearing agent for the Missouri "diploma mill") with bribery in connection with the sale of high school credentials certificates to students without the education necessary to enter medical colleges, was voted by the grand jury, December 12, at St. Louis, following the testimony of B. H. Jolly, St. Charles, county school superintendent, that he had furnished the certificates at $5 each. Dr. Adcox was the physician through whom a reporter of the St. Louis *Star* obtained an "M.D." certificate in three months for the sum of $1,100.

NEBRASKA

Scottsbluff County Medical Society.—At the annual meeting of the society in Scottsbluff, Dec. 13, 1923, Dr. Nelson H. Rasmussen, Scottsbluff, was elected president and Dr. Albert L. Cooper, Mitchell, secretary.

NEW YORK

Physicians' Home.—A circular letter has been sent to physicians signed by Drs. Robert T. Morris, Ralph Waldo, Albert G. Weed and Silas F. Hallock suggesting contributions to be applied to the maintenance of homes for physicians. One unit has been established at Candeadea, N. Y., where 168 acres of land have been donated by Dr. Stephen V. Mountain of Olean. This home welcomes every worthy physician and, if necessary, his dependent family. The letter urges the establishment of a unit home in the South and one in the West. The Physicians' Home, Inc., has the endorsement of the American Medical Association through a unanimous vote of the House of Delegates.

New York City

New York Chiropractors.—According to an article published by the *New York Medical Week*, official organ of the Medical Society of the County of New York, December 8, thousands of chiropractors are "openly and illegally practicing medicine in New York."

Fourth Harvey Society Lecture.—Dr. David Marine, director of laboratories, Montefiore Hospital, New York City, will deliver the fourth Harvey Society Lecture at the New York Academy of Medicine on Saturday evening, Jan. 19, 1924. His subject will be "The Etiology and Prevention of Simple Goiter."

Medical Society and Birth Control.—Dr. Dorothy Bocker, who has been giving advice on birth control in connection with Mrs. Margaret Sanger's clinic in New York, has been cited by the Medical Society of the County of New York to appear before the censorship committee of the society in the Academy of Medicine, January 11. Dr. Bocker is a member of the society.

Personal.—Dr. William Seaman Bainbridge addressed the University Club of Brooklyn on "Personal Experiences in the Rhineland and the Ruhr," December 19.——Dr. Emil Altman has been appointed chairman of the physicians to the board of education of the city following many years of service with that department.——Dr. Esther Lovejoy, chairman of the American Women's Hospitals and president of the Medical Women's International Association, was decorated with the Cross of the Legion of Honor at the French consulate, December 18, for her services in France during the World War.——Dr. David P. Barr, assistant professor of medicine in Cornell University Medical School, New York, has been appointed Busch professor of medicine at Washington University Medical School, St. Louis, beginning, Oct. 1, 1924. Dr. Barr has served as research fellow of the Russell Sage Institute of Pathology since his internship.——Dr. Charles H. Chetwood has been appointed attending urologist to the French Hospital.

Pharmacy "Diploma Mills."—The chairman of the committee on trade interest of the New York Pharmaceutical Association in the *Pharmaceutical Era*, December 22, stated that there are 150 druggists and pharmacists in New York styling themselves "doctors" whose sole right to the degree is a diploma supplied by some Western "diploma mill," usually on the instalment plan and after a ninety day correspondence course. A cut rate war among these pharmaceutical diploma mills, the *Pharmaceutical Era* adds, is making matters worse. One "university" has cut its rate to $75 for the degree of "doctor of pharmacy," while another offers to throw in a Ph.G. degree to students who are not college graduates for $10 extra. The editorial says: "In some districts in New York the unfair competition being brought about by the holders of these 'ten large lesson' doctors' degrees is playing havoc with the ethical druggists, who refrain from taking the course."

Hospital News.—The Jewish Hospital dedicated its new private wing, December 2. Money for the erection of this wing was donated by the family of the late Abraham Abraham and named for him. The seventy-six private rooms were opened for service, December 5. The building is six stories

high and is located at Classon Avenue and Prospect Place. Plans are being made for the new maternity wing to be named for the late Dr. Louis Louria.——The Infantorium, located in the Heckscher Foundation on Fifth Avenue, has increased its capacity to fifty beds. Admissions are limited to infants and children under 3 years of age, having nutritional disorders, such as rickets and scurvy. The following physicians have given their services during the past year: Drs. Louis Fischer, John A. Fordyce, Isidore Friesner, George B. McAuliffe, Harrie S. Baketel, Charles Gottlieb, William H. Stewart and Samuel B. Burk.——The erection of the new Samaritan Hospital will begin in April, 1924. The building, in the form of a letter H, will be built in sections. The first section, when equipped, will cost $250,000 and will accommodate about 100 patients.

NORTH CAROLINA

County Society News.—The Gaston County Medical Society reelected Dr. William B. Hunter president, and Dr. Charles O. DeLaney, secretary, respectively, at the annual meeting in Gastonia, December 5.——At the annual meeting of the Guilford County Medical Society, December 8, in Greensboro, Dr. Frederick R. Taylor, High Point, was elected president; Dr. Parran Jarboe, Greensboro, vice president, and Dr. Duncan W. Holt was reelected secretary-treasurer.——Dr. Thomas B. Henderson was elected president, and Dr. David J. Ross, secretary-treasurer, of the Wayne County Medical Society at the annual meeting at Goldsboro.

OHIO

Academy of Medicine Elections.—Dr. Wesley H. Neville was elected president of the Lima and Allen County Academy of Medicine for the ensuing year at the annual meeting in Lima, December 4: Dr. Allen N. Wiselee, Jr., was elected vice president; Dr. Virgil H. Hay, secretary, and Dr. Herbert A. Thomas, treasurer.——At the annual meeting of the Columbus Academy of Medicine, December 17, Dr. Frederick O. Williams was elected president; Dr. Earl H. Ryan, vice president, and Dr. Evan C. Brock, trustee. Dr. Otto P. Geier, Cincinnati, gave an address.

PENNSYLVANIA

Hospital News.—A drive for $250,000 has been launched for the proposed Livingstone Memorial Hospital for Pittsburgh. The institution will contain 100 beds and will serve both white and negro patients.——An addition will be erected at the Suburban General Hospital, Bellevue, at a cost of $150,000.

Society News.—The Schuylkill County Medical Society has had a room set aside in the new Free Library Building, Pottsville, as its permanent headquarters. The society will furnish the room and already has a good working reference library of books and journals.——The Western Pennsylvania Medical Officers' Association held a banquet and elected officers, December 13, at Pittsburgh. Dr. Karl A. Emmerling was elected president; Drs. Charles H. Henninger and Walter A. Dearth, vice presidents; Dr. Russell R. Jones, secretary, and Dr. Clyde W. Sample, treasurer. Taps were sounded for the members who died during the past year.

Philadelphia

Personal.—Dr. Carroll Fox, surgeon, U. S. Public Health Service, at the port of Philadelphia, addressed the students of the Women's Medical College of Pennsylvania, December 18, on public health topics.——A reception was tendered, December 6, to Dr. Maude E. Abbott of McGill University Faculty of Medicine, Montreal, Canada, by the board of corporators of the Woman's Medical College of Pennsylvania on the occasion of her assuming the professorship of pathology and bacteriology at the college.——Dr. Florence E. Kraker, Philadelphia, who has been teaching at Margaret-Williamson Hospital at Shanghai, China, has been appointed specialist in maternal hygiene in the Children's Bureau of the U. S. Department of Labor. Dr. Kraker will also be associate director of the maternity and infancy division of the Children's Bureau, which has immediate direction of the federal maternity and infancy act.——Dr. Orlando H. Petty has been appointed professor of metabolism in the Graduate School of Medicine of the University of Pennsylvania, Philadelphia.——Drs. Howard Kelly and Guy L. Hunner, Baltimore, addressed the Obstetrical Society of Philadelphia at the College of Physicians, January 3.——Dr. Henry A. Strecker, who has been connected with the health department Board of Health, Dr. Fred H. Works, U. S. Public Health for thirteen years and for several years has been assistant chief medical inspector, has been appointed medical director of private schools, according to an announcement of Dr. Blair Spencer, director of public health.

RHODE ISLAND

Echo of "Diploma Inquiry."—According to Dr. Byron U. Richards, Providence, secretary of the Rhode Island State Service, Boston and Stonington, Conn., whose license was one of the first eighteen revoked by the Connecticut special grand jury, tried repeatedly to secure a license to practice in Rhode Island. Each application was refused, it is stated, because of insufficient credentials.

SOUTH CAROLINA

Tuberculosis Camp.—At a meeting of the Charleston City Council it was voted, recently, to convey a 50 acre tract of land at Cherokee Place to the county tuberculosis association, on condition that the association shall erect and maintain a tuberculosis camp within one year sufficient to care for not less than twenty-five free patients legally resident in the county.

TENNESSEE

Hospital News.—Additions will be erected at the Erlanger Hospital, Chattanooga, at a cost of $175,000.——It is announced that a $60,000 hospital building will be erected at Hollins.——Bishop Nicholos of the Illinois diocese of the Methodist Episcopal Church formally opened the Greater Hubbard Hospital of Meharry Medical College, Nashville, Nov. 29, 1923.

TEXAS

Epidemic of Smallpox.—It is stated that there is an epidemic of smallpox in Nacogdoches County, 100 cases having already been reported. No cases have yet proved fatal. All school children in the county have been vaccinated.

Personal.—Dr. Edgar R. Boren, Belton, has been appointed health officer of Bell County to succeed Dr. Ambrose B. Crain, who served in that position for fourteen years.——Dr. Isaac N. Roberson, Gainesville, has been appointed county physician to succeed Dr. Rufus C. Whiddon.

Medical College Labroratory Approved.—Plans for the erection of a combined library and laboratory building for the University of Texas Department of Medicine, Galveston, for which the legislature made an appropriation of $300,000, were approved, December 12, by the state board of control. Bids will be opened January 12. It will be a four story, modern, fireproof building.

Society News.—At the annual meeting of the Eastland County Medical Society in Cisco, December 11, Dr. Robert C. Ferguson, Eastland, was elected president, and Dr. Joseph W. Gregory, secretary-treasurer. Dr. Arthur C. Scott, Temple, president of the state medical association, and Dr. Kenneth M. Lynch, Dallas, were the guests of honor. A public health council was organized.——Dr. Edwin L. Burton has been elected president of the Collin County Medical Society and Dr. Paul D. Robason reelected secretary.——At the annual meeting of the Bell County Medical Society in Temple, recently, the following officers were elected for the ensuing year: president, Dr. William H. Smith, Heidenheimer; Dr. Charles H. Hamblim, Holland, vice president, and Dr. Edgar R. Boren, Belton, secretary-treasurer.——Navarro County elected Dr. Earl H. Newton, president, and Dr. John Wilson David, secretary.

VIRGINIA

Greater Pine Camp.—The home of Richmond's tuberculosis colony, Greater Pine Camp, recently enlarged and modernized at a cost of $150,000, was formally opened, November 15. The five new units were opened for inspection by the public.

Hospital News.—The Johnston-Willis Hospital moved to its new building on Kensington Avenue, Richmond, Dec. 10, 1923, on which date it was formally opened. The new institution is six stories high and will accommodate 125 patients.——The McGuire Clinic, in conjunction with St. Luke's Hospital, was opened December 1. The clinic building has practically been rebuilt. The department of surgery, gynecology and urology will be in charge of Dr. Stuart McGuire and the department of medicine under Dr. Hunter McGuire and Dr. Garnet Nelson.

Society News.—At the meeting of the Richmond Academy of Medicine and Surgery, November 27, a new constitution and by-laws was unanimously adopted. It was agreed that in future the name of the society should be the Richmond Academy of Medicine and that the business and scientific work of the academy would be divorced, the business activities being put under charge of a body of trustees consisting of the incumbent president and the four latest former presidents of the academy, and that the scientific program should be delegated to a committee of three who, with the president and the board of trustees, would formulate the scientific work of the academy during each year.——At the recent annual meeting of the Arlington County Medical Society at Clarendon, Dr. Stacy T. Noland, Clarendon, was elected president and Dr. Benjamin H. Swain, Ballston, was reelected secretary-treasurer. The society will, in future, hold meetings only twice a year, in May and November, instead of quarterly, as formerly.

WISCONSIN

Hospital News.—A $500,000 addition will be erected to the St. Agnes' Hospital, Fond du Lac.——The Milwaukee Sanatorium for Diabetes, 272 Ogden Avenue, Milwaukee, was opened, Nov. 1, 1923.

Milwaukee County Medical Society.—At the annual meeting of the society in Milwaukee, Dec. 17, 1923, Dr. Maurice L. Henderson was elected president for the ensuing year; Dr. Robert W. Blumenthal, vice president; Dr. Edward L. Tharinger, secretary, and Dr. Joseph A. Purtell, treasurer.

PORTO RICO

Medical Examiners Elect.—At the annual meeting of the government of Porto Rico Board of Medical Examiners in San Juan, recently, the following officers were elected for the ensuing year: president, Dr. M. Quevedo Baez; secretary, Dr. Diego A. Biascoechea, and treasurer, Dr. Francisco Hernandez, all of San Juan. Other members of the board elected were: Drs. Pedro Perea Fajardo, Mayaquez; Francisco Sein, Lares; Luis Garcia de Quevedo, Carolina, and Francisco Matazo, San Juan.

CANADA

Personal.—Dr. G. J. Cassidy, lecturer in physiology at McGill University, is carrying on the physiology classes at Dalhousie University Faculty of Medicine during the serious illness of Dr. D. Fraser Harris, professor of physiology at Dalhousie.——Dr. Alexander R. Pennoyer, lecturer in surgery at McGill University, has been appointed medical adviser of the Bell Telephone Company of Canada to succeed the late G. A. Winters.——Dr. Frederick C. Bell, Winnipeg, has been appointed general superintendent of the Vancouver General Hospital to succeed Dr. Malcolm T. MacEachern.

Public Health News.—In a tuberculosis survey of 1,346 school children in Saskatchewan, it was found that 56.6 per cent. gave evidence of a previous infection. A study of incidence by age showed that 44.4 per cent. of the children were infected at the age of 6 years, and a larger number each year, so that 60.9 per cent. were infected at the age of 14. Of the Indians 92.5 per cent. showed infection as compared with 54 per cent., the average of all of the other races. Investigation of the sources of infection showed that 10 per cent. of the 1,184 white children had a history of exposure at home.—— Of seven Canadian provinces whose tuberculosis records are available from 1909-1921, Nova Scotia has the highest death rate. Pulmonary tuberculosis caused 9.7 per cent. of all the deaths from 1909 to 1921.

GENERAL

Association of American Medical Colleges.—The thirty-fourth annual meeting of the Association of American Medical Colleges will be held in Omaha, Feb. 27-March 1, 1924, at Omaha, in Conklin Hall, University of Nebraska. A large part of the program will be discussions and demonstrations of teaching methods by members of medical faculties. Dr. Fred C. Zapffe, Chicago, is secretary of the association.

Quacks and Liquor Permits.—The names of twelve of the first eighteen "physicians" whose licenses to practice medicine were revoked by the special grand jury in Connecticut, recently, who were found to be holders of permits to prescribe liquor have been submitted to federal Prohibition Director Putney by the state health commissioner of Connnecticut. They were ordered to return their permits, prescription books and all records pertaining to liquor prescriptions at once.

Medical and Surgical Association of the Southwest.—At the ninth annual meeting of the association in El Paso, Texas, December 11-13, the following officers were elected: president, Dr. John R. Van Atta, Albuquerque, N. M.; vice presidents, Drs. Harry H. Stark, El Paso, Texas, and Willard Smith, Phoenix, Ariz.; secretary-treasurer, Dr. William Warner Watkins, Phoenix, Ariz., and trustee, Dr. Roderick D. Kennedy, Globe, Ariz. The next meeting will be held in Phoenix, November, 1924.

Physicians in Sixty-Eighth Congress.—The sixty-eighth Congress of the United States which convened, December 3, includes among its members seven physicians. In the Senate is Dr. Royal S. Copeland, former health officer of New York City; Dr. Lewis H. Ball of Delaware, and Dr. Selden Palmer Spencer of Missouri. Physicians in the House include Dr. Ladislas Lazaro of New Mexico; Dr. John J. Kindred of New York; Dr. Charles Browne of New Jersey, and Dr. John William Summers of Washington.

Classification Board Minutes to Congress.—On December 20, the House of Representatives passed the resolution of Representative Lehlback, New Jersey, requiring the Classification Board to give Congress a complete copy of the minutes of the board from the date of its organization. This resolution was passed because of the dissatisfaction which exists in many departments of the government with the conclusions reached by this board on fixing the grades of federal employees. The decision of the board placing nurses in the subprofessional class has been the occasion for extended criticism of the board. Nurses are demanding that they be placed in the professional service, the minimum and maximum salaries of which service are $1,860 and $2,400, respectively; whereas the salaries of persons in the subprofessional service are $900 minimum, and $1,500 maximum.

Mortality from Typhoid Fever, 1922.—The Department of Commerce announces that there were 6,981 deaths from typhoid fever in 1922 in the death registration area. The death rate in 1922 from this disease was 7.5 per hundred thousand population, the lowest ever shown for the registration area. Of the thirty-four states shown for 1922 and 1921 only California, Colorado, Mississippi and New Hampshire show higher rates in 1922 than in 1921. In 1922 Rhode Island had the lowest adjusted rate (1.2 per hundred thousand population), while South Carolina had the highest (23). Of the nine states showing adjusted rates by color, the lowest rate for the white population in 1922 was 5.9 and the lowest for the colored was 13, both for Maryland, while the highest adjusted rate for the white population was 18.4 for Kentucky and for the colored 30.8 for South Carolina.

Mortality from Diabetes, 1922.—The Department of Commerce announces more than 17,000 deaths in 1922 from diabetes mellitus in the registration area, which comprises 85 per cent. of the population of the United States. Within this area the death rate from diabetes per hundred thousand population was 18.4 as compared with 16.8 in 1921. To permit better interstate comparisons in 1922, the table gives for thirty-four states adjusted rates (allowances having been made for differences in the sex and age distribution of the population in the various states). In these thirty-four states the highest adjusted rate (25.1) appears for New York, and the lowest (8.1) for Kentucky and also for Tennessee. Of the nine states showing adjusted rates by color, the highest rate from diabetes for the white population is 19.1 per hundred thousand for Maryland and the highest for the colored is 15.9 for the same state. The lowest adjusted rate for the white population is 7.5 for Kentucky and the lowest for the colored is 5.9 for Mississippi. For the thirty states in the registration area of 1918, the death rate from diabetes per hundred thousand population was 16 in 1918 and 9.1 in 1922.

Death Rates of Mothers from Childbirth, 1922.—The Department of Commerce announces lower death rates of mothers from childbirth or puerperal causes in 1922 than in any year since 1916. For the nine states and District of Columbia (constituting the "Birth Registration Area" of 1915, exclusive of Rhode Island), the death rate from puerperal causes in 1922 was 6.2 per thousand live births as compared with 6.5 in 1921, 7.6 in 1920, 6.8 in 1919, 8.9 in 1918, 6.3 in 1917, 6.2 in 1916, and 6.1 in 1915. The ratio of deaths from childbirth to the number of women bearing children in 1922 was 1 to 150. Of the thirty states for which figures are available, South Carolina has the highest death rate from puerperal causes (10.7 per thousand live births), and Minnesota the lowest (4.9). Separate rates for the white and colored are shown for only the six states of Kentucky, Maryland, Mississippi, North Carolina, South Carolina and

Virginia. For 1922 the highest rate for the white appears for South Carolina (8.5) and the lowest (5.3) for Maryland, while for the colored the highest rate (18.5) and the lowest (5.3) is for Kentucky, and the lowest (8.4) for Maryland.

National Committee for the Prevention of Blindness.—The annual meeting of the committee was held in the Russell Sage Foundation Building, New York, November 15, under the presidency of the Hon. William F. Morgan. When the committee was organized in January, 1915, its financial support came almost entirely from two grants of $5,000 each from the Rockefeller and Russell Sage foundations. In 1923 the income was nearly all obtained from about 6,000 contributors and without any aid from foundations. During the last nine years twenty-four publications have been issued; a collection of more than 600 slides has been made for lecture use; posters have been distributed; courses of lectures given in normal schools and newspaper service carried out. The committee has been influential in establishing various state commissions and local associations to deal with blindness. A junior committee for the prevention of blindness has been started which issues a *Junior News Letter* and enlists the services of children. The following directors were elected for the ensuing year: Drs. George S. Derby, James Clifton Edgar, Edward F. Glaser, Hiram Woods, Mrs. Seth Low and W. O. Hart, Preston S. Miller, H. F. J. Porter and J. A. Shawan.

Fatalities Due to Arsphenamin.—Three women died at the Longview Hospital for the Insane at Cincinnati, Nov. 23, 1923, soon after receiving intravenously a solution of arsphenamin. In reports which appeared in the public press it was made to appear that the fatalities were due to the excessive toxicity of the arsphenamin which had been received from the U. S. Public Health Service. In this connection the Surgeon General of the U. S. Public Health Service explains that the service does not distribute arsphenamin, vaccines, or other biologic products. In accordance with the procedure adopted to carry out the provisions of the Act of July 1, 1902, governing the manufacture, importation and sale of viruses, serums, toxins and analogous products, under Treasury Department regulations, the Hygienic Laboratory made tests of samples of the lots of arsphenamin in question, prior to the issue of the product by the manufacturer. Samples of the same lot of the drug which was used have been examined again at the Hygienic Laboratory, since the unfortunate accident, and these were found to be of satisfactory quality within a safe margin under the regulations. An investigation of the circumstances surrounding the administration of the drug shows, it is said, that the fatalities were chargeable to failure to neutralize the acid solution of the drug, and the excessive concentration, 0.5 gram being administered in 20 c.c. of fluid, a concentration at least five times as great as that which is regarded as desirable.

LATIN AMERICA

Argentine Medical Association.—The officers elected for 1924 are Drs. E. A. Boero, president; E. Belaústegui, vice president; Nicanor Palacios Costa, secretary general; Tristan González, annual secretary; F. R. Pasman, editor of the *Bulletin* and custodian of the archives, and Thwaites Lastra, treasurer.

End of the Mexican School of Homeopathy.—The *Revista de Ciencias Médicas* of Mexico relates that the president has abolished the School of Homeopathic Medicine at the capital and merged the two medical schools into one, much to the rejoicing of the profession. Our exchange remarks that Mexico has long been the only country with an official separate school for teaching homeopathy.

Prize to Houssay.—Argentina awards two important prizes in a national competition of scientific works. The first prize of 30,000 pesos is to be awarded to Dr. B. Houssay, professor of physiology at Buenos Aires, for his work "Physiologic Action of Pituitary Extracts." The second prize, 20,000 pesos, is to be divided between Drs. Pérez and J. Llambias for their respective works "Comparative Anatomy in Relation to Otology," and "Pathologic Anatomy and Physiology."

FOREIGN

Japan Trade-Marks.—The foreign tariffs division of the Department of Commerce, Washington, D. C., announces in its *Chemical Trade Bulletin* that owing to the destruction of the Japanese patent office and most of its records in the recent earthquake, it will be necessary for all those holding patent rights or trade-mark registrations in Japan to effect a new registration. This registration, however, will not be subject to any additional fee.

Septuagenarians.—The seventieth birthday is being celebrated this year of the neurologist K. von Monakow of Zurich.——The professor of medical history at Leipzig, K. Sudhoff, also completes his seventieth year.——Prof. J. Teissier was presented with a silver plaque on his retirement, in November, from the chair of clinical medicine at Lyons. The *Journal de médecine* reproduces the artistic plaque. Bard returns from Strasbourg to be his successor.——The Iceland Medical Society has published a large souvenir number of its organ, the *Læknabladid*, in honor of the seventieth birthday of Prof. G. Magnusson of Reykjavik.

Asylum for Orphans of Physicians in Spain.—Six years ago a government decree founded the asylum known as the Colegio del Principe de Asturias, to shelter and educate the orphans of physicians. Two years later the institution was inaugurated, and it has been a success from the first. There are now 102 inmates and more are coming this month, which will raise the number to 150. The expenses are paid by a stamp tax on medical certificates. An editorial in the *Siglo Médico* states that the plan was regarded by many as "fantastic and impracticable" at first, but it has worked out well. The institution has its own building. There have been 249 applications. Preference is given to children who have lost both parents and to the younger children in the family when the mother is living. Each of the provinces of Spain is entitled to a proportional number of places in the Colegio.

Society News.—The fourth International Congress of the History of Medicine will be held at Geneva, July 20-25, 1925, under the presidency of Dr. C. G. Cumston. Dr. A. de Peyer, 20 Rue du Général Dufour, Geneva, is secretary of the society.——The annual meeting of the International Society of Applied Psychology was held in Paris, November 20, under the presidency of Dr. Charles Fiessinger. Subjects dealt with were: (1) relation of affectivity to psychic diseases; (2) psychotherapy of troubles of affectivity, and (3) individual communications on psychotherapy and applied psychology.—— F. W. Twort, M.R.C.S., delivered a series of five lectures on "The Influence of Environment on the Life of Bacteria" before the Royal College of Surgeons of England, December 11-18. ——The Harben lectures at the Royal Institute of Public Health were given by Prof. D. Levaditi of the Pasteur Institute, Paris, December 11-13. The lectures dealt with neurotropic virus (encephalitis herpes), neurovaccine, and with the new discoveries in the treatment and prophylaxis of syphilis.

Annual Meeting of the Swedish Medical Association.—It was announced at the recent annual meeting that the association now has 1,508 members, including nine foreign and ten Swedish honorary members, and 161 foreign members. The foreign members elected during the year were Profs. C. Nicolle, Tunis; J. Kyrle, Vienna; L. Bolk, Amsterdam; H. Meige, A. Nicolas and J. Nageotte, Paris; L. Bianchi, Naples; G. Mingazzini, Rome; F. Samberger, Prague; K. V. Christiansen, E. V. E. Maar and W. S. Johnsson, Copenhagen; W. Spielmeyer and F. Plaut, Munich, and Dr. C. U. Airens Kappers, director of the International Institute for Research on the Brain, Amsterdam. The association has endowments for scientific research totaling 335,800 crowns, and 6,298 crowns were awarded in prizes and stipends during the year. The funds for benevolent purposes total 995,200 crowns, and over 50,000 crowns have been distributed among more than 100 physicians' families in need. The Jubilee prize was awarded to Fåhræus, as already mentioned, for his research on the diagnostic importance of the speed of sedimentation of the blood corpuscles. The Alvarenga prize was given to Drs. G. Liljestrand and M. Arborelius for their study of the effect of muscular exercise on the reaction of the blood, and the Lennmalm prize to Prof. S. Ingvar for his research on the cerebellum. The Trafvenfeldt gold medal was presented to Dr. E. Sederholm in appreciation of his services as treasurer for nearly a quarter of a century. Five new funds have been founded during the year, one of 500,000 crowns, founded by a layman for cancer research, and one by Prof. I. Holmgren to assist in the publication of works of members of the association in the *Acta Medica Scandinavica*. The presidential address, by Dr. J. Sjöqvist, was on the subject "Occurrence in the Urine of a Hitherto Undescribed Glucoproteid." The president-elect is Dr. C. D. Josephson.

Deaths in Other Countries

Dr. H. Schmit, Linz, director of the maternity and midwifery school, aged 57.——Dr. **Deny,** Paris, formerly psychiatrist at the Salpêtrière.——Dr. **G. Duncan Whyte,** missionary and examiner in medicine at Hongkong University, China, died in that city, November 25.

Government Services

The Mellon Tax Bill

The Mellon Tax Reduction Bill, framed by experts of the Treasury Department and made public this week, does not contain any modifications of the existing federal tax laws specially relating to the medical profession. There are three provisions in the existing law which are regarded as an unjust tax on physicians.

1. The unnecessary tax of $3.00 a year on physicians who prescribe or administer narcotics.
2. The denial of the right to deduct traveling expenses while physicians are away from home in the pursuit of their profession.
3. The denial of the right to deduct the expenses of post-graduate study.

As a result of the failure of Secretary Mellon and his experts in the Treasury Department to incorporate modifications of these provisions in the Mellon bill, the medical profession will be compelled to appeal to Congress with respect to the above tax provisions which discriminate against the profession. Denial of the right to deduct traveling expenses and the expenses of postgraduate study is not specifically contained in the existing federal tax laws, but these taxes are the result of interpretations of the law by the Commissioner of Internal Revenue; although other tax payers such as traveling men, are allowed to deduct traveling and hotel charges. It is true that manufacturers and merchants are allowed to deduct from their incomes expenses incurred in visiting cities other than their respective places of business to replenish and enlarge their stock of merchandise and to learn better methods of manufacturing and merchandising. It is argued that the learning and skill of the physician and his professional connections should be held to be as much a part of his professional equipment, as the establishment, equipment and good will of the manufacturer and merchant is. The Harrison Narcotic Act of 1914 imposed a tax of a dollar a year on physicians prescribing or dispensing narcotics. When the Revenue Act of 1918 was framed new sources of revenue were sought to help pay war time expenses; and this tax was increased to $3 a year. The increase was primarily a war time tax. The taxes collected are largely in excess of the amount required to enforce the law. The government received in the fiscal year 1923, $1,269,039.90 from the Harrison Narcotic Law and the cost of enforcing it was $858,728.77. To the extent that the tax is in excess of the government's expenses in its enforcement, the tax is a discrimination against the medical profession. There is no more reason for such tax on the physician than on the lawyer, the architect or any other profession.

Hospitals Authorized

Pursuant to instructions from the Secretary of War, June 27, 1922, the organization of the following hospitals, organized reserves, has been authorized: Surgical Hospital No. 40 (Waterbury Hospital Unit, Waterbury, Conn.), Evacuation Hospital No. 47 (Grant Hospital Unit, Columbus, Ohio), General Hospital No. 77 (Jewish Hospital Unit, Brooklyn), General Hospital No. 76 (Lebanon Hospital Unit, New York) and General Hospital No. 99 (Ohio State University College of Medicine Unit, Columbus, Ohio).

Report of the Surgeon-General of the Navy

The report of the Surgeon-General of the Navy for the fiscal year 1923, just received, calls attention to the difficulty of obtaining sufficient medical officers for the navy. In a campaign to recruit the medical corps to full strength, the Surgeon-General personally addressed 12,000 letters to physicians qualified as to age and education for appointment, and letters to each intern serving in hospitals recognized by the American Medical Association. The Surgeon-General also wrote letters to each member of the senior classes of the Class A medical schools to explain the desirability of the medical corps of the navy as a career. Twenty-five qualified candidates had accepted commissions up to July 1, 1923, and had been assigned to duty in the larger naval hospitals, making a total of 757 medical officers. Should six applicants who had not yet accepted commissions at the time of this report be commissioned, the medical corps of the navy would still have been thirty-seven officers short of full strength. From the unsatisfactory results of his extensive campaign, the Surgeon-General concludes that the inducements offered by the navy are not sufficient to attract young physicians, and that legislation which will increase the desirability of the service in the future is necessary.

The health of the navy in general during the calendar year 1922 was better than usual. The death rate—3.22 per thousand—was the lowest on record. There were fewer admissions for all causes to the sick list than there has been in any other recent year. Venereal diseases held first place among the classified causes of morbidity, displacing respiratory diseases, which, for the first time since the pandemic of influenza, dropped into second place; diseases transmissible through personal contact and secretions from the nose and mouth were third; accidents and injuries fourth, and diseases of the digestive system fifth. These five groups were responsible, as usual, for more than two thirds of all admissions to the sick list, and caused 57.5 per cent. of the time lost on account of morbidity and accidents.

In a survey of health conditions in the Samoan Islands, 2,500 cases of yaws were discovered by the Navy Medical Department. A campaign was immediately started to eradicate this disease, and at the time of reporting more than 7,000 doses of neo-arsphenamin had been administered. Regulations were enforced for the treatment of all new cases of yaws and for the destruction of flies, which are the chief agents in the transmission of yaws in Samoa. Typhoid fever, which formerly was prevalent in the Virgin Islands, has been abolished by requiring all residents between 5 and 45 years of age to be inoculated with antityphoid vaccine. Smallpox in these islands has been prevented by vaccinating the entire population.

Favorable Response to Medical Officers' Reserve

The information recently published in THE JOURNAL concerning the Medical Officers' Reserve Corps and the new regulations governing appointments and promotions has produced a favorable result. During the months of November and December approximately 1,500 applications were received in the office of the Surgeon-General, and new appointments were made of which 845 were medical officers, forty-eight sanitary and sixty-five medical administrative officers; the remainder being dental and veterinary. Nine military hospital units in affiliation with civil institutions have been authorized since November. Surgeon-General Ireland has requested the appointment of military committees in state medical societies in order to provide more intimate liason with members of the state societies. This, it is expected, will develop into a means for conveying information as to the progressive plans of the War Department in the organization of the Reserve Corps.

New Bills Before Congress

A bill was introduced into the House of Representatives, Dec. 5, 1923, authorizing the Secretary of the Treasury to sell the U. S. Marine Hospital reservation and improvements thereon at Detroit and to acquire a suitable site in the same locality and to erect thereon a modern hospital for the treatment of beneficiaries of the U. S. Public Health Service, and for other purposes.——Mr. Langley introduced a bill, December 17, to authorize an appropriation to enable the director of the U. S. Veterans' Bureau to provide for the construction of additional hospital facilities and to provide medical, surgical and hospital services and supplies for persons who served in the World War, the Spanish-American War, the Philippine insurrection and the Boxer rebellion and are patients of the U. S. Veterans' Bureau.

Renewal of Permits Under National Prohibition Act

Physicians who have applied for renewals of their permits under the National Prohibition Act and who have not received notice of action should notify the Prohibition Commissioner, Washington, D. C., by registered letter not later than January 15. In this communication the physician should be specific as to when the application for renewal was sent and all the facts connected therewith. Also a copy of this communication should be sent, by mail or otherwise, to the prohibition director of the district in which the physician lives, who should be informed as to the number of the registry receipts given by the postmaster for the communication. If this procedure is carried out, the present permit will continue in force as a renewal permit until January 31.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Dec. 10, 1923.

The Prevention of Venereal Disease

At a meeting of the Council for Combating Venereal Diseases, an increase in the number of cases of assault on children and young girls was reported, as proved by the investigations of women police and also by the numbers brought before the magistrates during the last two years. Many cases reported to the police do not come before the magistrates owing to insufficient evidence. Numerous cases are not reported to the men police because the mother shrinks from discussing details with a man, and it is therefore considered that women police would be much better for this work. The communication of venereal disease to young children is held to be a menace to the future of the race, and the harm done to the child incalculable. Some children have been infected with venereal disease at the age of 2 years. The pernicious belief that venereal disease can be cured by contact with a young child is responsible for much suffering. It has been found in many cases that the accused man has borne a good reputation or is suffering from shell shock. A resolution was carried unanimously that public opinion should be aroused to the evil, that the existing laws should be stringently administered, and that financial penalties were not a sufficient deterrent. A resolution was also passed drawing attention to the importance of encouraging through parents and teachers the teaching of modern psychology as bearing on the control of conduct and particularly as assisting in the formation of habits of self-control from infancy onward. With regard to the sale of materials for self-disinfection by those who have exposed themselves to infection with venereal disease, it was recommended that a deputation should interview the minister of health to urge that only duly qualified pharmacists be permitted to sell such materials, and that no commercial advertising be permitted.

The Inner History of the Production of Mustard Gas

At a sitting of the war inventions commission, for the settlement of claims made for inventions used during the war, some interesting evidence was given with regard to the first attempts in this country to produce on a large scale a gas that played an important part in the later stages of the war. At the first attempt to make a large quantity by one process, the whole potful bubbled up and escaped from its container, and but for the fact that a covered catchpot had been provided, every man on the job would have been killed and the works themselves unapproachable for weeks. In May, 1918, it was said that nothing was of greater military importance than a large supply of mustard gas, as our troops were discouraged by the fact that the Germans had got this stuff, while we had not. In the attempt to make the gas at one place there were 1,400 casualties. When used for the first time by us in September, 1918, in the artillery preparation for the fourth army attack on the Hindenburg line, it was most successful. After shelling with the gas for six hours, the hostile batteries were silenced for twenty-four hours or longer.

British Science

Speaking at the forty-sixth anniversary of the foundation of the Institute of Chemical Industry of Great Britain, Lord Haldane said that in this country the production of young men of science had gone on with extraordinary vigor, and, while we might not produce as many here as were produced on the European continent, he was sure that we produced more peaks and pinnacles. But he did not consider that in this country we took full advantage of the applications of science to industry. He warned his audience that if we did not develop science to the utmost and, above all, see to its application to industry, we should fall far behind. We were a wonderful people, but we could not prevail against knowledge. There came a time when science, knowledge and organization were essential. He thought that we had come to that time. The problem of the future was to see that more science was applied to industry and that the application was organized in the best way. He was not one of those who thought that the state could ever produce science. That would always be the work of individuals and of genius. He had no doubt about our being able to hold our own in the world. The only doubt was as to how much we would suffer from going slow too slowly. He hoped that the new parliament would be more interested in the diffusion of knowledge than British parliaments in the past have been.

Medical Representation in Parliament

Five physicians who were members of the last parliament were returned at the recent election, and also five new ones, thus divided among the parties: conservatives, four; liberals, two; labor, four. Among the labor members is Mr. Somerville Hastings, surgeon in charge of the ear and throat department of the Middlesex Hospital. All these members have been returned as party candidates, and there is no ground for supposing that their membership in the medical profession was a factor of any importance in the result. However, there has been a movement in the profession to promote the return of medical members of parliament. In 1918, the British Medical Association formed with this object the "Medical Representation in Parliament Fund." The idea was to get the views of the profession more accurately stated in parliament, particularly on questions of national health insurance. But the fund was not well supported. The British Medical Association has therefore made an appeal to the profession, pointing ont that its affairs in one shape or another come with greater frequency before parliament than they used to, and that therefore it is desirable that physicians should be present who can speak from first hand experience and who, by their training, can meet able debaters on an equal footing. In the last two parliaments the position of the profession has slightly improved. In the election just past, six candidates—four conservative and two liberal—were given financial assistance from the fund. One was a member of the Council of the British Medical Association, but he was unsuccessful. Although only two of the political parties are represented in the list, the fund is absolutely nonparty and constitutes a pool out of which it is intended to support candidates from any party who can show from their record that they are likely to be useful to the profession in the House of Commons. The only test put to them is that their views as to medical politics should be in general agreement with the policy laid down by the British Medical Association. This precludes support to candidates who, for example, believe in a whole-time state medical service, or in putting voluntary hospitals on the rates; but it does not exclude any person on the grounds of his general politics. The policy is not only to give support to suitable candidates who may apply for it, but also to encourage suitable ones to come forward.

Sir Frederick Treves

The death from peritonitis at Lausanne of Sir Frederick Treves has removed one who in the nineties of the last century was in some ways the leading surgeon in this country, and certainly the one most in the public eye. Born at Dorchester in 1853, he was trained at the London Hospital, to which in 1879 he was appointed surgical registrar and assistant surgeon. He first began to work on the anatomy and

surgery of the intestinal canal and peritoneum at a time when the subject was in its infancy, and he did much to advance our knowledge. In 1881 he was appointed Wilson professor of pathology and Hunterian professor of anatomy at the Royal College of Surgeons, and was the only one who had held both appointments. His lectures on the intestinal canal of man and other animals were based on hundreds of dissections, and corrected many errors. In 1883 he published his textbook of "Surgical Anatomy," which at once became, and still is, a standard work both here and in America, and has been translated into several languages. In 1884 he gained the Jacksonian prize at the Royal College of Surgeons for an essay on "Intestinal Obstruction," which obtained high praise from Sir Spencer Wells, himself a pioneer in abdominal surgery. Then came his "Manual of Operative Surgery" and his highly popular student's handbook of "Surgical Operations." On the outbreak of the South African War, in 1899, he was appointed consulting surgeon to the army, and did much to improve the poorly organized medical service of those days. One episode of that war was the large number of society women who went to the front to help in the nursing. But many of them gave more trouble than help, and Treves, in a phrase that became famous, said that the British army was suffering from "a plague of women." His experiences in the war led him to become one of the founders of the British Red Cross Society. In 1902, he successfully operated on King Edward for appendicitis on the eve of his coronation. His practice then became overwhelming, and in 1908, though in full vigor, he retired, saying that no surgeon should operate after the age of 55. But his retirement only opened a new field of activity. He could wield the pen as well as he could the knife, and had literary skill of a high order. A lover of the sea and the holder of the certificate of a master mariner, he devoted himself to travel and the description of what he saw. Though a born surgeon and a born teacher, it was said that literature was his real love. His books included descriptions of the East and West Indies, Palestine, Uganda, Italy and the Riviera. They were all marked by charm and insight. Mr. T. P. O'Connor declares that he learned more of some of the eastern lands described by Treves in "The Other Side of the Lantern" than from any other book. By a curious irony of fate, his younger daughter died from appendicitis and he himself from peritonitis—subjects on which he was the leading authority of his day.

The Panel Struggle

A new phase in the three-cornered struggle between the government, the panel physicians and the friendly societies has been opened by the official announcement of the court of inquiry set up "to inquire and report what should be the proper amount of the capitation fee so as to afford adequate remuneration for the time and service to be given by general practitioners under the conditions set out in the regulations." The government is pledged to provide the money required if the arbitrators accept the views put forward by the physicians, but no statement has been made as to its source. The friendly societies resent any of what they regard as their funds being used to meet the cost of medical benefit, such funds being required either as reserves or a means of providing additional benefits. They contend that the service is poor and that the fee should be lower than that offered by the government. The physicians contend that, with rare exceptions, the service is satisfactory, but that if the remuneration is reduced the ablest practitioners will be driven out of it, and the possibility of establishing a satisfactory national health service demolished. They contend also that the societies have ample funds to meet the necessary cost without additional government grants. An acute struggle between the two parties is to be expected. If the physicians win, another struggle will take place in parliament as to who is to find the money. It is stated that many members are pledged to oppose any call on the funds of the societies. The only alternative source is the taxpayer. But resort to him will be opposed vigorously by those who contend that the service should be self-supporting.

PARIS

(From Our Regular Correspondent)

Dec. 7, 1923.

Medical Graduates from French Universities

During the school year 1922-1923, 1,138 degrees in medicine were conferred by the universities of France, being distributed as shown in the accompanying table.

Degrees in Medicine Conferred by French Universities, 1922-1923

	State Diplomas	University Diplomas	Total
Algiers	19	6	25
Beirut	30	..	30
Bordeaux	154	13	167
Lille	43	2	45
Lyons	156	41	197
Montpellier	96	13	109
Nancy	30	10	40
Paris	382	44	426
Strasbourg	17	9	26
Toulouse	64	9	73
	991	147	1,138

Nineteen students who received degrees from the University of Strasbourg, in accordance with German rules and regulations, are not included in the table. It will be recalled that only the state diplomas confer the right to practice medicine. Students of the University of Beirut were not required to present graduating theses.

The Crusade Against Venereal Diseases

In a previous letter, I referred to an article by Dr. Escher on the antivenereal campaign in the Army of the Rhine (THE JOURNAL, Nov. 24, 1923, p. 1801). At a recent meeting, the Société française de prophylaxie sanitaire et morale discussed the same subject in connection with the appearance of a pamphlet by Lasnet, the chief medical inspector. In addition to the pages devoted to birth statistics and infant mortality, and to the work of medical inspection in the French educational institutions in the Rhine Province, the pamphlet contains valuable information on antivenereal prophylaxis.

Talks on the dangers of venereal diseases were given at the close of the school year to the graduating class. Major Schickelé spoke of the duties of the husband toward his family and toward society, and the need of being vigorous and healthy in preparation for marriage. He then pointed out the possible consequences of a single departure from the path of duty, and sketched in outline the nature of venereal diseases. He emphasized continence not only from the standpoint of duty but also as the only sure means of avoiding infection, bringing out that continence, contrary to a widely prevalent but foolish belief, has never been harmful. He advised those who yielded to temptation and had the misfortune to become infected not to conceal their condition but to go at once to a reputable physician.

Speaking of the close cooperation between French military surgeons and German physicians, General Lasnet dwelt on the useful part played by what is called in Germany the "consultation center," which was first established by the state in 1917. It was created at the suggestion of the health insurance societies, which, since the war, having to provide sick benefits and treatment for those suffering from venereal dis-

case, have sought to minimize the disabilities resulting therefrom by providing regular treatment and, in the case of syphilis, careful follow up of the patients. This is a form of prophylaxis comparable to that employed by fire insurance companies in endeavoring to keep down their losses by giving financial aid to the fire department. Physicians are not only relieved from the duty of preserving professional secrecy but are compelled by law to report to the consultation center cases of syphilis that come to their attention. Provided with such evidence, the consultation center incorporates the names of venereal patients in a card index and summons them to appear in order to enlighten them on the nature of the disease from which they are suffering. It keeps a careful check on them, urges the necessity of treatment, and directs them, according to their resources, to a hospital, clinic or dispensary. It keeps them informed of the dates when they must come for treatment; if they fail to report, their names are given to the police, who put them under surveillance and, on the first suspicion of contamination, compel them to submit to examination and hospitalization, if there is evidence that they have infected any one. German law provides a fine and imprisonment for any person who transmits an infectious disease to a third party. The consultation centers for venereal disease are located in the large cities, but branches are being gradually established in the smaller cities. When patients move to another district or another city, their names are sent to the proper authorities, together with a statement of their condition.

Dr. Jeanselme, professor of cutaneous diseases (including syphilis) at the University of Paris, is of the opinion that such vigorous action could hardly be applied in France. However, we have before parliament a bill introduced by M. Louis Martin, senator from the department of Var, which proposes to make contamination a punishable offense and imposes a fine on any person who infects another. Jeanselme holds, however, that there is no chance of sexual contamination being made a penal offense. However, if the offense is interpreted as M. Godart proposes, there may be some chance of its being voted on favorably. M. Godart proposed to the International Congress on Antivenereal Propaganda that the misdemeanor of sexual contamination be made more general in its application and not be confined to venereal diseases. It remains to be determined, in any given disease, what prophylactic rules must be met by the patient and his family; the means of determining whether he has committed a misdemeanor capable of injuring others, and the relationship between the person charged with the misdemeanor and the disease of the supposed victim.

Suicide in Parkinson's Disease

Professor Euzière, dean of the medical faculty of the University of Montpellier, has just published an article in the *Languedoc médical*, in collaboration with Blouquier de Claret and Pagès, in which he shows that in postencephalitic types of Parkinson's disease patients present, in addition to motor disorders and generalized muscular hypertonia, certain psychic changes which are characterized by the preservation of intelligence and memory, with tendencies to claim compensation, irritability, pronounced sexual excitability and suicide, tendencies that are not based on a hypochondriac state. Every now and then, even during a general conversation, in which the patient is taking part pleasantly and easily, he may remark that he wishes he could kill himself. But the idea does not concern him deeply, and he speaks as if talking of some one else.

Euzière and his collaborators report three such cases: two men and a girl 18 years of age. The two men demanded a war pension and presented other revindicatory tendencies. One of these patients met a tragic end. The patient was in the habit of saying occasionally, but without seemingly attaching much importance to what he was saying, that it would be better if he put an end to his life. Since he showed no signs of hypochondria, and nothing in his manner or character awakened a suspicion that he seriously wished to end his existence, he was given daily permission to leave the hospital for a time. One day when at home, he told his wife in a playful tone that he wanted to drown himself. He left the house and turned toward the river, which was not far from his home. His wife, after allowing him to proceed a few yards, called him back, and he obediently returned. Two hours later, taking advantage of the fact that his family was no longer watching him, he again left the house and never returned. Worried by his absence, his family went to look for him, but in vain. He had carried out his wish and had drowned himself.

The Results of the Moureu Expedition

In a recent letter (THE JOURNAL, Aug. 4, 1923, p. 404), I referred to the departure for Madagascar of a scientific expedition directed by Monsieur C. Moureu, professor in the Collège de France. Moureu is now engaged in the preparation of a complete report of the expedition, and has already published some of the essential points. The results of previous investigations into the radioactivity of the thermal springs of Antsirabé were not confirmed. On the other hand, owing to their temperature and physiochemical properties, which resemble those of the Vichy springs, they are of considerable therapeutic interest.

Moureu calls attention to the high morbidity among the natives (Malgaches), who, on account of their scanty clothing, are much exposed to diseases of the respiratory passages. Pneumonia is one of the principal scourges, while malaria and syphilis are rife. Many more physicians are needed. The development of a larger medical school at Tananarivo, which is to be followed by the erection of a hospital for natives, will make it possible to accommodate more students, and the number of native physicians will soon be increased. It will be necessary to furnish a sufficient number of European physicians, but these cannot be secured unless they are offered acceptable working conditions. The economic future of Madagascar depends primarily on bringing about an increase in the population, and this increase is conditioned, to a certain extent, by the development of the medical service in the island.

Death of Dr. G. Deny

The death of Dr. G. Deny, formerly physician to the Salpêtrière Hospital, has been announced. Early in his career he planned to become a surgeon. He served an internship under Péan in the Saint Louis Hospital. In collaboration with Péan, he published a work on "Le pincement des vaisseaux," which met with some success. Later he gave up surgery for psychiatry and made a special study of dementia praecox. For a long time he was a collaborator of the *Semaine médicale*, to which he contributed reports of the proceedings of scientific societies and of the Congress of Alienists and Neurologists.

Foundation of an Institute of Sanitary Technic

At the suggestion of the undersecretary of state for technical instruction, the minister of public instruction has recently created an institute of sanitary technic in the national conservatory of arts and handicrafts. The purpose of this institute is to train sanitary technicians: engineers, architects, hygienists, master builders and others, and is open to all former students of our large technical establishments, and, in a general way, to all those whose studies or profession have put them in possession of the scientific knowledge needed for the study of sanitary technic. More particularly,

doctors of medicine, pharmacists and students of medicine of three years' standing are admitted with full rights to pursue courses in this institute. Regularly enrolled students who pass the final examinations will receive certificates as sanitary technicians. Instruction will be free and will not extend over more than three months, so that students who live outside the Paris region may complete their studies in as short a time as possible. The instruction will be given in the form of lectures by authorities in the different specialties, such as Professors Léon Bernard, Calmette and Desgrez.

BELGIUM

(From Our Regular Correspondent)

Dec. 4, 1923.

A Prize in Therapeutics

The Royal Academy of Medicine of Belgium has accepted the gift offered by the Section des secours médicaux et pharmaceutiques of the National Committee, which functioned during the war. This gift, amounting to 20,000 francs principal, is to be used to establish a prize, awardable every five years, in the field of pharmaceutics and therapeutics. This amount is the sum left in the treasury after closing the services at the end of the war, and consists mainly of rebates on invoices of drug shipments.

Cancer of the Colon

After the important discussions of the French Congress of Surgery, the problem of neoplasms of the large intestine had ended in a general exchange of views. Dr. Sebrecht, in addressing the Genootschap voor Heelkunde en Gynaekologie, called attention to the main points in the line of treatment that he had adopted, some of which differ from the principles commonly accepted today. In operating between periods of obstruction, Dr. Sebrecht is opposed to the operation in several stages, for the mortality is the same as for the one-stage operation. When obstruction is present, on the other hand, the operation in several stages is indicated, on account of the danger of stercoremia. If stercoremia results, Sebrecht recommends spinal anesthesia and injections of serum with caffein and epinephrin, which, in his opinion, improve the prognosis considerably by facilitating intestinal peristalsis.

Lymphoid Tumors

Speaking before the Société belge de radiologie, Dr. Sluys recently called attention to the good results obtained by roentgenotherapy in the treatment of lymphoid tumors but emphasized the dangers of such treatment applied to tumors of a tuberculous nature.

Roentgenographic treatment of lymphoid tumors varies with the type of the tumor, which is usually poorly defined. This must be studied and the karyokinetic index must be determined. Tumors with a sarcomatous tendency should be treated vigorously with heavy doses of penetrating rays distributed over a short period. What roentgenography fails to do, surgical intervention will accomplish. The author presented four cases, lymphosarcoma of the buttock, lymphosarcoma of the neck and the tonsils, angiosarcoma of the neck, and lymphosarcoma of the neck with invasion of the lung, in which a cure—or apparent cure—was accomplished by this means.

Tumors of a tuberculous nature should be treated with prudence—at certain intervals. Less penetrating rays are sufficient. Heavy doses might produce generalization of the tuberculosis. Two cases reported by the author ended in that manner after a period of apparent recovery.

Artificial Delivery of the Placenta

Before the Belgian Society of Gynecology and Obstetrics, Jean Rossignoli of Buenos Aires described recently a new method for artificial expulsion of the placenta, the technic of which is very simple. It consists in injecting serum into the umbilical vein by means of a syringe or a Guyon irrigator. This fluid so injected effects an easy detachment of the placenta. The cord is cut at the level of the vulva. The injected fluid should be isotonic. The author has used commonly hot water at a temperature of from 40 to 50 C. The quantity necessary to inject ranges from 200 to 500 gm. Contrary to what happens in physiologic expulsion, it is the expansion of the placenta that brings about its detachment. When infiltrated the surface diameter of the placenta is increased.

An Orthopedic Service in Boston

Dr. Peeremans, who has recently spent a year in Boston as a fellow of the Fondation universitaire, described before the Societe d'orthopédie the orthopedic service of the Children's Hospital in Boston. After reviewing the equipment of the hospital as a whole, and, more especially, the organization of the orthopedic service, together with the clinics for treatment of infantile paralysis, scoliosis, and spastic and obstetrical paralysis, he presented certain special methods of treatment he had observed in the service to which he was attached. These addresses given by Belgian physicians who have spent some time in America contribute much toward strengthening scientific reciprocity and the establishment of friendly bonds between the two nations.

The Population of Belgium

The statistical work entitled, "Annuaire statistique de la Belgique," just published by the minister of the interior, states that on Dec. 31, 1920, the territorial area of the country was 3,044,101 hectares, while the population was 7,465,782. Deducting the population of the cantons annexed to Belgium by the Treaty of Versailles, the population of Belgium was, in 1920, 22,431 less than that shown by the 1910 census.

Previous to 1920, the population of Belgium was increasing 10.5 per cent. every ten years. Applying this percentage to the population of 1910, it is evident that Belgium would have had, in 1920, a population of 8,200,000, if it had not been for the war. The war has caused us, therefore, a loss of about 880,000 inhabitants.

As regards sex distribution, the statistics show that on Dec. 31, 1920, the number of men was 3,644,301 and the number of women, 3,761,268, or an excess of 116,967 women over men.

Cancer Research

There existed in Belgium a commission for the study of cancer, which, with its very modest means, was working with great energy; but now, under the patronage of the queen, a national league of Belgium for combating cancer has been formed, whose efforts in regard to propaganda and research will serve to strengthen the work of the societies of France, England and the United States in this urgent and difficult campaign. The league organized a congress, held at Brussels, at which were present representatives from eleven different countries. The congress was opened, in the presence of the queen, in the Palais des Académies, under the chairmanship of Professor Bayet, by an address by the minister of the interior and of public health. The speaker called to mind the great increase in the number of cancer victims, sixteen falling a prey to its ravages every day in Belgium. Belgium is alive to the necessity of gaining a better knowledge of cancer and of keeping up with modern discovery in this field. It has a commission on cancer study and the Belgian government plans to grant it an appropriation of one million francs. Numerous communications were presented, and Professor Bergonié gave an outline of the organization of the anticancer center of Bordeaux. He gave also a summary of what is known at present in regard to the causes of cancer.

Professor Bayet explained the plan of action that had been determined on by the Belgian league. It is divided into three distinct departments: (1) a medical department that will have charge of the treatment of patients and of scientific research; (2) a propaganda department which will organize plans for the education of the public, particularly with a view to giving instruction in the recognition of the first signs of cancer and to emphasizing the necessity for immediate medical care, and (3) a welfare department which will interest itself in the establishment of hospitals for cancerous patients, one of which has been in existence for a number of years. I refer to the Hospice du Calvaire (Calvary Friendly Shelter).

During the course of the discussions, Professor Hoffman, statistician and counsel for the Prudential Insurance Company of America, proposed the creation of an international association of anticancer societies of the world.

Emigration and Immigration

The annual statistical report issued by the Belgian government contains some interesting facts on emigration and immigration, and it may be noted that these factors have little influence on demographic data. From 1881 to 1890, the result of the combined influence of these two factors is represented by a loss of 18,421 inhabitants, whereas the increases in population amounted to 594,312. From 1891 to 1900, the increase in the population was 624,277, while the loss through the excess of emigration over immigration was 21,113. From 1901 to 1910, the situation is reversed, for the immigrations exceeded the emigrations by 12,443, while the increase in the total population was 730,236.

BERLIN

(From Our Regular Correspondent)

Dec. 8, 1923.

Physicians and the Health Insurance Societies

In the conflict between physicians and the health insurance societies, to which I have referred in two recent letters, nothing essentially new has developed. The two opposing camps continue to hurl charges at one another, some of which appear in the daily press and others, in the large cities, are blazoned on the *Litfass-Säulen* (placarding columns erected at conspicuous corners in many German cities). As is customary in the political world, in both the larger and the restricted sense, each party to the conflict puts the blame on the other. If one may judge from the sentiment that finds expression from time to time, not only the general public but also those who are insured in the health insurance societies are, for the most part, on the side of the physicians. The outcome of the struggle will depend, to a great extent, on whether the government and the reichstag adopt decisive measures; but another principal factor in the case is, which of the two opponents can, from the economic standpoint, hold out until the government takes action. The insured members of the health insurance societies have been urged by the executive committees to dispense with medical assistance, so far as possible. The question now is, whether or not the insured will, in the nature of the case, be disposed to comply with this request. A factor that makes it difficult for the physicians to keep up the struggle is their weakened financial status. Therefore, it can scarcely be expected that the request of the administrative officers of the Gross-Berliner-Aerzte-Bund (the Physicians' League of Greater Berlin) that all physicians shall contribute 20 per cent. of their professional income to a common fund for carrying on the struggle can be complied with by any considerable portion of Berlin physicians; at least, not for some time. There is, however, no getting away from the fact that a defeat of the panel physicians will impair greatly their professional status, both with respect to health insurance in general and professional earnings in particular.

The Dismissal of Officials and Teachers in Germany

The progressive impoverishment of Germany makes it necessary to retrench in every way possible, and for this reason the number of teachers in the educational institutions and of officials in the public health service has been greatly reduced. The basis on which dismissals are accomplished is a matter of considerable general interest, because it throws light on the capacities and the performances of men engaged in scientific work. The dismissal of all teachers and officials more than 65 years of age is being considered, on the ground that, when they have reached that age, their capacity and performance are always much reduced, and that, therefore, they can no longer be counted on to turn out a reasonable quantity of satisfactory work. But not only is it recommended that men who have passed their sixty-fifth year shall be forced out, but also to teachers and officials who are a little under 65 the suggestion is given that they resign their positions before they reach the age limit. Persons who have completed their 58th year and have served at least ten years are urged to request the government authorities that they be placed on the retired list, with pension, without furnishing evidence of incapacity. In addition, where more persons are employed than are actually needed, a certain number may be dismissed. In the selection of those whose services can be dispensed with, no weight is to be attached primarily to the economic and social conditions of the teacher or official, but ability, capacity and performance are to be mainly considered. In case the capacity and the family conditions of two slated for dismissal are about equal, those over 60 years of age shall be dismissed first. Other things being equal, a certain weight may be attached to the fact that persons have children to support, in which case the number and the relative dependence of such children may be taken into account. Teachers and officials who are suffering from disabilities shall not be dismissed until the last.

Personal

Aschoff (Freiburg) and Lubarsch (Berlin), professors of pathologic anatomy, delivered addresses recently before the Russian Society of Pathologic Anatomy, meeting in Petrograd. They were appointed honorary members of this society.

Marriages

RICHARD L. HUDNALL, Beverlyville, Va., to Miss Mary E. Robertson of Heatsville, November 7, at Baltimore.

JOHN W. TURMAN, Richmond, Va., to Mrs. Dell Williams Peoples, of Warrentown, N. C., October 27.

MAURICE IRVING MILLER, Troy, Ohio, to Miss Izola Catherine Conklin of Columbus, December 24.

POWELL GARLAND DILLARD, Lynchburg, Va., to Miss Nannie Sue Hoge of Pembroke, November 20.

SYDNEY CHARLES FEINBERG, New York, to Miss Nettie Cohen of Brooklyn, November 27.

JOSEPH THOMPSON MCKINNEY to Miss Ruth Markley, both of Roanoke, Va., November 14.

JOHN LUTHER REICH to Miss Anna Belle Boyd, both of Altamont, Mo., December 15.

WILLIAM PERCY JONES to Miss Eliza Palmer, both of Urbanna, Va., in October.

EDWIN W. MORSE to Miss Ada Doernbecher, both of Portland, Ore., October 27.

JOHN F. MEANY to Miss Jennie Clarke, both of Rockwell, Iowa, November 9.

HARRY B. SANFORD to Miss Alice Smith, both of Richmond, Va., November 14.

Deaths

Charles Parker Bancroft ⊕ Concord, N. H.; Medical School of Harvard University, Boston, 1878; died, December 14, at the Mary Hitchcock Memorial Hospital, Hanover, of cerebral hemorrhage. Dr. Bancroft was born in St. Johnsbury, Vt., in 1852. He served on the staff of the Boston (Mass.) City Hospital, and as consultant in mental hygiene at Dartmouth College, Hanover, and was for thirty-five years superintendent of the New Hampshire State Hospital for the Insane. He had been president of the American Psychological Association, the New England Psychological Society and the Boston Society of Psychiatry and Neurology. He was the author of many works on insanity and a contributor to "Wood's Handbook of the Medical Sciences." He was elected president of the New Hampshire Medical Society in 1919, and had served as president of the New Hampshire Savings Bank and the New Hampshire Board of Charities and Corrections.

Thomas Smith Dabney, New Orleans; Medical Department University of Louisiana, New Orleans, 1879; past president of the Orleans Parish Medical Society; member of the Société de médicine publique de Belgique; served as an assistant surgeon in the U. S. Army, during the Spanish-American War; went to Colombia, South America, for the Louisiana State Board of Health; aged 73; died, December 28.

Addison Sanford Thayer ⊕ Portland, Maine; Medical School of Maine, Portland, 1886; Medical School of Harvard University, Boston, 1888; professor of medicine and dean of the Bowdoin Medical School, 1912-1921; past president of the Maine Medical Association; for twenty-nine years on the staff of the Maine General Hospital; aged 65; died suddenly, December 14, of angina pectoris.

John Callan ⊕ New Orleans; Medical Department of the Tulane University of Louisiana, New Orleans, 1884; member of the board of administrators at his alma mater; past president of the Orleans Parish Medical Society; for many years chairman and superintendent of the city board of health; aged 61; died, December 28, of cerebral hemorrhage, while at work in his office.

Joseph Kent Worthington ⊕ New York; Johns Hopkins University Medical Department, Baltimore, 1908; formerly assistant professor of genito-urinary surgery at the Indiana University School of Medicine, Indianapolis; on the staff of the New York City Hospital; served with the American Red Cross in France during the World War; aged 41; died, December 17, of heart disease.

Daniel Buckley, Seattle; University of Minnesota Medical School, Minneapolis, 1898; member of the Washington State Medical Association; formerly city health commissioner and deputy coroner; on the staffs of the Providence and King County hospitals and the Columbus Sanitarium; aged 48; died, December 18, of pneumonia.

Chauncey Rea Burr ⊕ New York; Medical School of Harvard University, Boston, 1888; member of the Maine Medical Association; honorary vice consul of Spain for the state of Maine; aged 61; died in December, at the St. Barnabas Hospital, Portland, Maine, following an operation.

Forrest Russell Butterfield ⊕ Chicago; College of Physicians and Surgeons, Chicago, 1905; served in the M. C., U. S. Army, during the World War; aged 44; died, December 25, at the Jackson Park Hospital, of injuries received when his automobile was struck by a train.

Edward Frankel, New York; Medical Department of Columbia College, New York, 1868; formerly member of the school board; at one time on the staffs of the New York City and Fordham hospitals; aged 74; died, December 16, of heart disease.

Zebulon Thomas Crawley, Holyoke, Colo.; Chattanooga (Tenn.) Medical College, 1901; member of the Colorado State Medical Society; joint proprietor of the Holyoke Hospital, where he died suddenly, November 9, of pulmonary hemorrhage, aged 47.

John Edward Montgomery, Ladysmith, B. C., Canada; University of Toronto (Ont.) Faculty of Medicine, 1910; served with the Canadian Expeditionary Forces in France during the World War; aged 37; died, November 6, of diphtheria.

Karl Raymond Malotte, Maryville, Mo.; Northwestern University Medical School, Chicago, 1910; member of the Missouri State Medical Association; aged 36; died, October 6.

⊕ Indicates "Fellow" of the American Medical Association.

Harry Somerville ⊕ Chest Springs, Pa.; Cincinnati (Ohio) College of Medicine and Surgery, 1888; past president of the Cambria County Medical Society; aged 55; died, December 8, of peritonitis and pneumonia, following an appendectomy.

George Eugene Titcomb, Concord, Mass.; Medical School of Harvard University, Boston, 1881; member of the Massachusetts Medical Society; aged 69; died in December, at Manchester, N. H., following a long illness.

James Henry Anderson, Brookline, Mass.; Medical Department of the University of the City of New York, 1860; member of the Medical Society of the State of New York; aged 84; died, December 10, of senility.

Edward Lorenzo Grossman, Oakland, Calif.; Cooper Medical College, San Francisco, 1894; aged 53; died, November 24, at the King's Daughters of California Home for Incurables, of chronic endocarditis.

Ellis L. Hawthorne, Mount Pleasant, Ohio; Medical College of Ohio, Cincinnati, 1887; member and president of the school board; on the staff of Martin's Ferry (Ohio) Hospital; aged 61; died, December 9.

James C. Mitchell, Louisville, Ky.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1897; at one time member of the state board of health and city health officer; aged 48; died, December 2.

Fred Hopkins Harris, Coldwater, Mich.; University of Michigan Medical School, Ann Arbor, 1898; member of the Michigan State Medical Society; aged 48; died, December 12, following a long illness.

William Clive Smith ⊕ Wilkes-Barre, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1893; on the staff of the City Hospital; aged 55; died suddenly, December 11, of embolism.

Hardy A. Skelton, Spencer, Neb.; College of Physicians and Surgeons, Keokuk, Iowa, 1891; formerly joint proprietor of the Spencer Hospital; aged 56; died, December 5, of paralysis.

Thomas Graham Phillips, Toronto, Ont., Canada; University of Toronto Faculty of Medicine, 1859; at one time health officer of Winnipeg, Man.; aged 90; died, November 4, of senility.

John Alexander Langrill, Hamilton, Ont., Canada; University of Toronto (Ont.) Faculty of Medicine, 1866; aged 78; died, October 22, at the Hamilton General Hospital, of senility.

Oliver P. Graham, Jeffersonville, Ind.; University of Louisville (Ky.) Medical Department, 1890; formerly city and county health officer; aged 57; died, December 12.

Thomas J. Creel ⊕ Angola, Ind.; Rush Medical College, Chicago, 1893; formerly mayor of Angola; aged 55; died suddenly, in December, of thrombosis.

Joseph A. Swartzel ⊕ Indianapolis; University of Louisville (Ky.) Medical Department, 1879; aged 74; died, December 15, following a long illness.

Leonard P. Woodworth, Little Rock, Ark.; Rush Medical College, Chicago, 1870; Civil War veteran; aged 84; died, December 9, of senility.

Douglas Howard Kincaid, Danville, Ky.; Georgetown University School of Medicine, Washington, D. C., 1891; aged 60; died, December 8.

Bertram James Ferguson, Teeswater, Ont., Canada; University of Toronto (Ont.) Faculty of Medicine, 1904; aged 41; died, October 22.

James Wilson Cook, Mountville, Ga.; Vanderbilt University Medical Department, Nashville, Tenn., 1882; aged 69; died, November 1.

Charles A. Stone, Belvidere, Ill.; Chicago Homeopathic Medical College, 1877; aged 74; died, December 9, of cerebral hemorrhage.

Christen S. Nielsen ⊕ Withee, Wis.; Chicago Homeopathic Medical College, 1896; aged 49; died, December 9, of pernicious anemia.

Vance C. Powers, Mount Vernon Springs, N. C.; University of Georgia Medical Department, Augusta, 1911; aged 40; died, November 30.

William Lavern Lawrason, Toronto, Ont., Canada; University of Toronto Faculty of Medicine, 1895; aged 53; died, November 4.

J. H. Young, Hickory Plains, Ark. (licensed, Arkansas, 1903); aged 84; died, October 10, of heart disease.

Milton Van Dyke, Seattle; Rush Medical College, Chicago, 1880; aged 72; died in December.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

INTARVIN

Preliminary Report of the Council on Pharmacy and Chemistry

Because of numerous inquiries received, the Council has authorized publication of the following report.

W. A. PUCKNER, Secretary.

Intarvin is marketed by The Intarvin Co., Long Island City, New York. Dr. Max Kahn, Associate in Biochemistry, Columbia University, and physician in charge of metabolic diseases at Beth Israel Hospital, New York, applied for a patent on the product, not as a discovery per se or for the process of manufacture, but for the discovery of its use in diabetes.

Many statements have been given the lay press by those interested in the promotion of Intarvin for use in diabetes, but as yet no publication has appeared in the medical press except preliminary reports by Kahn.[1] Due to this lay publicity, the public and the profession have heard conflicting stories. Intarvin is hailed as lesser than insulin, and greater. Its severest critic says ". . . intarvin is neither new nor valuable." Some claim that it is easily tolerated; others that it has a "nauseating effect." The more conservative believe that it may prove valuable for use in diabetes.

Intarvin, recommended for use in diabetes or any condition wherein acidosis occurs, is the result of the application of a chemical theory to synthesize a fat with no potential danger for producing acidosis. In diabetes, in addition to the lack of assimilation of carbohydrates, there occurs incomplete oxidation of fats. Fats are the glyceryl esters of fatty acids and in nature, fatty acids invariably are compounds with an even number of carbon atoms. In the process of digestion, these fatty acids break down by the removal of two carbon atoms at each step. In health, the end products of this process are carbon dioxid and water. In the incomplete combustion occurring in diabetes, the final product in the breaking up of the fat is not a two carbon atom complex, but a four carbon atom one, butyric acid, which oxidizes to oxybutyric acid and acetoacetic acid, the products present in most conditions of acidosis. The theory behind Intarvin is simple: If a palatable fat could be produced from a fatty acid, with an odd number of carbon atoms, the end product of combustion could not be the four carbon atom complex that is responsible for acidosis. Such fats were known to science, but commercial processes for production, and the use of the fats when synthesized, had never been successfully demonstrated. Accordingly, Intarvin was synthesized and is stated to be essentially the glyceryl ester of margaric acid (a seventeen carbon atom acid). The name signifies its intermediary position between the usual sixteen and eighteen carbon atom fatty acids that occur in nature. As the glyceryl ester of margaric acid is very stiff, Intarvin is said to be admixed with from ten to twelve per cent. of liquid petrolatum to render it of softer consistency.

Theoretically, one molecule of glyceryl margaric ester should yield two molecules of dextrose. Dr. Kahn reports that the "administration of this fat (Intarvin) to phlorhizinized dogs causes a marked increase in the glucose elimination in the urine, showing that *in the dog* it is broken down to propionic acid and is then converted to glucose. . . ." The antiketogenic effect would undoubtedly depend on the yield of dextrose and stipulate that the dextrose was burned in the body. Even if the available dextrose was not burned, but the remainder of the fat completely oxidized, a yield of approximately 7.7 calories per gram to the organism should result.

1. Proc. Soc. Exper. Biol & Med. **19**: 265, 1922; **21**: 31, 1923.

Diabetes, at the present time, has two established methods of treatment: (1) a carefully controlled diet, and (2) the administration of insulin in order that the patient may assimilate a maintenance diet. The discovery of insulin, which gives a means of enabling the diabetic person to assimilate not only carbohydrates, but natural fats, curtails the usefulness of Intarvin. Insulin treatment, however, is not without its disadvantages. The dose of the drug must be most carefully calculated and balanced against the diet; it must be given subcutaneously, often one, two or three times a day in the more severe cases. In view of these difficulties, an artificial fat that would be at once palatable, cheap and free from danger of causing acidosis, should be valuable in planning a diabetic diet.

Intarvin is still in the experimental stage, and it is unfortunate that so much newspaper notoriety has been given it. At present, no sure estimate of its worth can be made. Experiments with it are being conducted by some of the leading physicians in this country, but no reports of this work are yet available. Until the cumulative evidence for its usefulness, palatability and practicability is available, it is best to suspend judgment. It will probably find a field of usefulness, but how broad is that field remains to be determined.

Correspondence

"THE FALLACY OF SAHLI 'DESMOID REACTION'"

To the Editor:—In THE JOURNAL, Oct. 20, 1923, Dr. Buckstein of New York, on the basis of an experiment of doubtful value, combats the accuracy of the desmoid reaction, introduced by me into clinical medicine. Before offering any criticism of his experiment, I should like to call the attention of the author to the literature of the subject, which, with the exception of an English translation of an early edition of my textbook, seems to be unknown to him. For otherwise, he would scarcely have advanced the opinion that the method is solely supported by an "assertion" of A. Schmidt and by the "authority" of my name. The investigations of Schmidt are not the only publications on the subject, nor are they a mere authoritative statement, lacking proof. The desmoid reaction has been studied, both experimentally and clinically, and rests on incontrovertible findings, in the main on our knowledge that crude connective tissue, such as raw catgut, is dissolved through the action of pepsin but not through the action of trypsin. The test is applied in the following manner: A minute rubber bag, containing a pill with methylene blue and securely tied with a string of raw catgut, is swallowed by the patient. Under normal conditions, the appearance of methylene blue in the urine (positive desmoid reaction), after a certain lapse of time, demonstrates that the catgut has been digested by the action of pepsin.

Following Kühne (*Verhandl. d. naturhistorisch-med. Vereinigung Heidelberg* **1**, 1877), Ludwig and Ogata (*Dubois' Arch.*, 1883) and A. Schmidt (*Deutsch. med. Wchnschr.*, 1899, No. 49, p. 811; *Stzgsber. d. nied. Ges. f. Natur- u. Heilk.*, Bonn, 1899), who all showed that raw connective tissue is digested only by pepsin and not by the pancreatic ferment, I was able to prove that raw catgut, which is readily dissolved by gastric digestion, resisted digestion by pancreatic ferments, even when previously subjected for a short time to the action of gastric secretion. Likewise, pancreatic ferments, even in the presence of putrefaction caused by the bacterial flora of the intestine, did not digest raw catgut, even when placed in an incubator for several days. Baumstark and Cohnheim (*Tr. Cong. f. inn. Med.*, 1910, p. 368; *Ztschr. f. physiol. Chem.* **65**: 477, 1910) have corroborated these experiments and have furthermore shown that raw connective tissue is not digested

by the pancreatic secretion, even when enterokinase from the intestinal mucous membrane of the dog has been added to the latter. It follows that the only physiologic solvent of crude connective tissue is pepsin and acid. One of my former assistants, Dr. Wolfer, has shown that a desmoid reaction does not occur when, during the operation of gastro-enterostomy, the desmoid pill is introduced directly into the small intestine in man. This shows that catgut is not digested by the pancreatic and intestinal ferments in man. Baumstark and Cohnheim have further demonstrated the exclusive influence of gastric digestion in dissolving raw connective tissue in a dog, into whose small intestine this tissue had been introduced through an intestinal fistula, and in another dog with temporary gastric achylia. The investigations of Cohnheim and Baumstark have also disproved the assertions of Saito, according to whom catgut is unable to withstand pancreatic digestion, when the latter is activated by enterokinase. Saito's results can be explained only by the fact that he did not use reliable raw catgut in his experiments and employed ready made desmoid pills of inferior quality, manufactured and offered for sale by a dealer against my advice. I have uttered a warning against the use of this ready made article, mainly on account of the changeable quality of the catgut used and the inaccurate occlusion of the desmoid pill.

I myself have made some recent experiments on the subject and have found, in accord with Baumstark and Cohnheim, that raw catgut has remained unchanged when exposed for many days in an incubator to the action of trypsin in an akaline medium to which enterokinase and erepsin from the small intestine of the dog had been added. Besides, I could demonstrate in these recent experiments that raw catgut remained absolutely unchanged in human natural highly active alkaline intestinal secretion, which I procured partly by Boldyreff's oil test meal from the stomach, and partly by extraction of human feces according to the method of Gross. To my mind the correctness and usefulness of the desmoid reaction is thus definitely and absolutely established, by which I mean that raw catgut in the human body is dissolved only through the action of pepsin but never by pancreatic ferments even after many days in the presence of enterokinase and erepsin or after putrefaction has set in.

The clinical value of the desmoid reaction has been fully established by those authors who have applied the test in conformity with my suggestions and with a proper appreciation of the information to be derived. I may mention, in this connection, the articles of Eichler (Ewald: *Berl. klin. Wchnschr.*, 1905, No. 48, p. 1493), Kaliski (*Deutsch. med. Wchnschr.*, 1906, No. 5, p. 185), Gentzen (*ibid.*, 1907, No. 35), Lipowski (I. A. D., Bern, 1911) and, especially, the discerning and exhaustive investigations of Custer (*Schweiz. med. Wchnschr.*, 1921, No. 47, p. 1091; No. 48, p. 1115). In my own clinic the method has been in continuous use for almost twenty years, and we have arrived at no erroneous conclusions by its use. The object of the test should, however, be correctly appreciated. I mention this particularly, as in certain earlier publications, contrary to my intentions, attempts were made to utilize the desmoid reaction in determining the presence or absence of free hydrochloric acid in gastric juice, using the test breakfast as a criterion. I have never recommended the desmoid reaction for this purpose; on the contrary, I have always warned against this use, as later investigations have shown that the question of free hydrochloric acid in the stomach has been incorrectly formulated in the light of the modern theory of hydrogen ion concentration and that the older methods of finding and estimating free hydrochloric acid are of no value. (See my article in the *Schweizer medizinische Wochenschrift*, 1923, 1924.)

Dr. Buckstein, evidently in ignorance of the voluminous literature on the subject, has attempted to discredit the method by a procedure of questionable value, in my opinion. I refer to the passing of a rubber tube into the duodenum, armed with a metal tip, which has been sewed on with untreated catgut. He believes that the metal tip has passed into the small intestine, and he demonstrates by a roentgenogram that the metal tip has become detached after a lapse of eighteen hours. He concludes from this that the catgut has become dissolved by the intestinal ferments. This experiment seems to me to be inconclusive. In the first place, I believe that the passing of a soft rubber tube into the duodenum is a procedure that may occasionally be successful. That this should be so constantly or with a moderate amount of certainty has not been proved. Roentgen-ray examinations, which should establish this fact, are, in the majority of cases, not made, and the conclusion that the tube has passed into the duodenum is generally accepted somewhat lightly because some bile-stained fluid is withdrawn by the tube. But such a conclusion is in no wise justified. Most authors who are of this opinion do not seem to be acquainted with the method of Boas (*Centralbl. f. inn. Med.*, 1889, No. 6, p. 97; *Ztschr. f. klin. med.* **17,** 1890), also employed by Thschlenoff (*Cor.-Bl. f. schweiz. Aerzte*, 1889, No. 6, p. 161) at my clinic, according to which it is possible to withdraw a certain amount of bile and pancreatic juice from the empty stomach in a large number of cases in which a tube has been passed into the stomach, but no farther. Evidently, regurgitation of bile-stained duodenal secretion into an empty stomach occurs very easily. The oil test breakfast of Boldyreff-Volhard (*Arch. f. d. ges. Physiol.* [Pflüger's] **121**:13, 1908; **140**:436) is based on this observation. No doubt the oil test breakfast facilitates the flow of the contents of the duodenum into the stomach, but such backward flow also occurs without it. Nor is, as there found, the massage of the duodenum, recommended by Boas and Tschlenoff, who evidently were not aware of a spontaneous flow of the duodenal fluid into the stomach, necessary for this purpose.

From all that has been said, I have gained the conviction that in many of the publications on this subject the tube never really entered the duodenum as intended, and it is somewhat astonishing that many writers on the subject evidently assume that the passing of a tube into the duodenum is a quite easily accomplished task. In his criticism of the desmoid reaction, Dr. Buckstein employs this unreliable procedure. He accepts as proof of the passage of the rubber tube into the duodenum the roentgenogram reproduced in his article. However, no measurements are given, the outlines of the bones are partly missing in the two plates, and there are no data concerning the size and position of the stomach and the location of the umbilicus. Especially the second roentgenogram, taken after separation of the tip from the tube, is little convincing. Dr. Buckstein should, in the first instance, prove absolutely that the tube, at the time the metal tip separated from the latter, was no more in the stomach or had not slipped back into it. But let us assume for a moment that the separation of the metal tip from the tube had really occurred within the intestine. Are we justified, even then, to assume further with Buckstein, against all the experimental proof I have adduced, that digestion of catgut in his case has taken place within the intestine through the action of pancreatic ferment, and that the desmoid reaction is indeed a "fallacy"? Buckstein's conclusion would be sound only if no other explanation were possible. But this is not the case. I will accept that the catgut used was really "untreated," as Buckstein says, and in that sense met my demands for a proper material. One might ask, however, whether the catgut was of sufficient strength and so applied at the point of contact of the tip with the tube that it could offer sufficient resistance to the friction caused by peristalsis of eighteen hours' duration without giving way. But, disregarding even this,

desire to call attention to some conclusions not previously mentioned in the article of Cohnheim and Baumstark, previously referred to. These authors, who have proved experimentally the indigestibility of raw connective tissue by the pancreatic ferment, have made the further interesting observation that, under certain conditions, a not inconsiderable portion of the small intestine in dogs in which intestinal fistulas have been established can function as an annex to the stomach. In two such animals they discovered in the upper portion of the small intestine, at distances of 35 and 75 cm. from the pylorus, active pepsin-hydrochloric acid digestion with very high acidity during from five to six hours after intake of food, which gradually gave way to an alkaline reaction under the influence of gall and pancreatic secretion. Similarly, in the human being, peptic reactions (pepsin and hydrochloric acid) do occasionally occur in the upper part of the small intestine, as is attested by the occurrence of peptic ulcers in the duodenum. Assuming, in Buckstein's case, that the tube had really passed into the small intestine, it is possible that the catgut has been digested by peptic action (pepsin and hydrochloric acid) continued in the upper portion of the small intestine, especially when the physiologic closure of the pylorus is disturbed by a tube lying in the pylorus, facilitating the flow of gastric juice containing pepsin and acid into the intestine. If this or one of the other explanations of Buckstein's experiment I have mentioned (tube in the stomach, mechanical rupture of the thread) is accepted, the clinical value of the desmoid reaction is in no wise disproved; for it is entirely irrelevant whether a positive desmoid reaction (i. e., pepsin digestion) takes place in the stomach or in the upper portion of the intestine functioning as annex of the stomach. The value of the desmoid reaction does not, in the first place, consist in the determination of the location in which the reaction occurs, but in the fact that it tells us that peptic digestion occurs at all.

I cannot, therefore, regard the publication of Buckstein as disproving the diagnostic value of the desmoid reaction, a method that has had the approval of the medical profession for almost twenty years. I would, on the contrary, recommend for a fuller appreciation of the method in a clinical sense, a perusal of the last German edition of my textbook and the painstaking work of Custer, although I do not entirely agree with this author in his attempt to abandon the use of the stomach tube and rely alone on the desmoid reaction in examinations of the stomach. The tube should always be used, when possible, in connection with the desmoid test, as the two methods supplement each other.

PROF. DR. HERMANN SAHLI, Bern, Switzerland.

That Humble Individual.—The great inductions which have solved problems or have applied facts directly to the cure or prevention of disease, have been made mostly by that humble individual, the "private enthusiast"—generally either a teacher or a "mere doctor." William Harvey was a mere doctor; Edward Jenner a mere country doctor! What laboratory did Jenner require? He did not even use a microscope, and yet he gave to humanity the greatest single boon which it has ever received, and which also initiated our present knowledge of immunity. G. F. H. Kuchenmeister, who first proved alternations of generations in parasites, was a practicing doctor. Pasteur was a professor of chemistry. Lister was a practicing surgeon here in Glasgow. Robert Koch was also a mere practicing country doctor when he discovered the bacilli of anthrax and of surgical sepsis, the staining of bacteria, and plate-cultivation, thus making practical bacteriology. Manson was a doctor in China. Laveran, Bruce, Reed and Leishman were, or are, army doctors. Need I mention any more names?—I should have to hurl almost the whole history of medicine at you! Where were the laboratories of these men?—in their own hospitals and consulting rooms.—Sir Ronald Ross, the Management of Medical Research, *Glasgow Medical Journal*, November, 1923.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

FIRMA-CHLORO

To the Editor:—Can you give me any information regarding a product known as "Firma-Chloro," marketed by the Chloro Chemical Corporation, 17 East Forty-Second Street, New York? This is stated to be a mixture of chlorid of lime, tincture of iodin, picric acid, potassium chlorate, sodium bicarbonate and glycerin. I understand that it was once sold as "Oil of Salt." Most extravagant claims are made for this preparation as an antiseptic; incidentally, an extravagant price is charged. The mixture seems to me rather irrational, if not containing actual incompatibles.

What interests me most is the way it is exploited. Nurses in some of our other plants appear to have been approached, and though our physicians in charge have not countenanced its use, and assure me it has not been handled, the company quotes these plants as "using" it. . . . If their claims of extensive and successful use are no better substantiated in the case of other industrial organizations than in our own, there is no ground to believe them.

I do not want to go any further in this matter until I can find out more about the product, if possible; and, if it should seem best to bring the matter to the attention of our board of directors, I should wish to do so on a basis of facts rather than on the statements now presented, which seem fictitious.

C. G. A., M.D., Ohio.

ANSWER.—Firma-Chloro is prepared by the Chloro Chemical Corporation, New York. It is recommended as a "powerful chlorinated disinfectant, antiphlogistic, non-irritant and non-toxic." Its range of use, according to a statement from the manufacturer, extends from first aid dispensary treatment to most severe cases of gangrenous infection even under tropical conditions. The label carries a nonquantitative formula; the so-called formula is given in the letter of our correspondent. The product is alkaline in reaction; hence, the iodin, such as might be present in tincture of iodin, would be converted to sodium iodid and sodium iodate. Altogether, the formula is impossible and unscientific, and the product is another example of an irrational antiseptic (see discussion of Gly-So-Iodinate, THE JOURNAL, December 22, p. 2132; also editorial "A" Formula or "The" Formula? p. 2118). The product, while resembling Oil of Salt in some of its physical properties, is unlike Oil of Salt in chemical make-up. The Association chemists analyzed "Oil of Salt" in 1915, and reported that it was essentially a "mixture consisting of about two-thirds linseed oil with one-third of a mixture of essential oils including turpentine, camphor and sassafras, containing total chlorids equivalent to 0.52 per cent. hydrochloric acid, one-third of which is present as free hydrochloric acid." While the chemical composition is different, the favorite method of introducing Firma-Chloro, however, is much like that of Oil of Salt, namely, sending letters to manufacturing plants importuning them to have the product placed in the first aid or medical department. If industrial physicians will take the same sensible stand as that of our correspondent, the exploiter will soon be made to realize that such specious methods of approach will count little with general factory managers, board of directors and the like.

NEW REGULATIONS FOR RESERVE CORPS

To the Editor:—Regarding the recent new regulations for the Reserve Corps, may I ask whether under them the following cases would occur, and if so, could it be considered an equitable plan?

1. A physician of good standing and established practice entered the service in 1918 at the age of 35, was commissioned a captain, and remained as such for eleven months, followed by honorable discharge.

2. Another physician, aged 27, just graduated, also entered the service in 1918, was commissioned first lieutenant, ten months later received a captaincy, and was honorably discharged three months later.

The first physician may enter the reserve as captain. The second may enter as major. Does it seem right?

M. E. S., N. J.

ANSWER.—The new regulations for appointment in the Medical Officers' Reserve require, among other things, that an officer must have served satisfactorily on active duty for at least one year before he is eligible for appointment in the grade of major. The first officer in the question proposed in our correspondent's letter, therefore, was not eligible, since he had been on active duty only eleven months. The second officer mentioned met these requirements; he had served more than a year, had been a captain three months, and is entitled to a major's commission provided his record indicates that he possesses the necessary qualifications for field grade.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, January 8. Chairman, Dr. Samuel W. Welch, Montgomery.

COLORADO: Denver, January 8. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

INDIANA: Indianapolis, January 8. Sec., Dr. W. T. Gott, State House, Indianapolis.

NATIONAL BOARD OF MEDICAL EXAMINERS: Written Examinations in Class A Medical Schools. Part I, February 13-15, 1924. Secretary, J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Application for this examination must be made on or before January 15, 1924.

NEW YORK: Albany, Buffalo, New York and Syracuse, January 28-31. Ass't, Mr. Herbert J. Hamilton, State Education Bldg., Albany.

PENNSYLVANIA: Philadelphia, January 29–February 2. Sec., J. George Becht, M.D., State Capitol, Harrisburg.

SOUTH DAKOTA: Pierre, January 15. Dir., Dr. H. R. Kenaston, Bonesteel.

VERMONT: Burlington, February 12. Sec., Dr. W. Scott Nay, Underhill.

WASHINGTON: Olympia, January 8. Sec., Mr. William Melville, Olympia.

WISCONSIN: Madison, January 8-10. Sec., Dr. J. M. Dodd, 220 E. Second St., Ashland.

Rhode Island July Examination

Dr. Byron U. Richards, secretary, Rhode Island Board of Health, reports the written and practical examination held at Providence, July 5-6, 1923. The examination covered 7 subjects and included 70 questions. An average of 80 per cent. was required to pass. Of the 9 candidates examined, 8 passed and 1 failed. The following colleges were represented:

PASSED College	Year Grad.	Per Cent.
Johns Hopkins University Medical Department	(1920)	89.5
Harvard Univ. Sch. of Med.	(1904) 92.5, (1920) 91.1, (1922)	91.1
Jefferson Medical College	(1922)	91.9
Tufts College Medical School	(1919) 82.7, (1922) 84,	92.2

FAILED College	Year Grad.	Per Cent.
Laval University Faculty of Medicine, Quebec	(1923)	76.8

Hawaii July Examination

Dr. J. E. Strade, secretary, Hawaii Board of Medical Examiners, reports the written examination held in Honolulu, July 9-12, 1923. The examination covered 8 subjects and included 55 questions. An average of 75 per cent. was required to pass. Of the 4 candidates examined, 3 passed and 1 failed. The following colleges were represented:

PASSED College	Year Grad.	Per Cent.
Yale University	(1922)	80.3
Rush Medical College	(1921)	83.9
Boston University School of Medicine	(1922)	77.6

FAILED College	Year Grad.	Per Cent.
Chiba Special Medical School, Japan	(1922)*	55.1

* Graduation not verified.

Massachusetts September Examination

Dr. Charles E. Prior, secretary, Massachusetts Board of Registration in Medicine, reports the oral, written and practical examination held in Boston, Sept. 11-13, 1923. The examination covered 7 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 39 candidates who took the physicians' and surgeons' examination, 18 passed, including 3 osteopaths, and 21 failed, including 3 osteopaths. The following colleges were represented:

PASSED College	Year Grad.	Per Cent.
Chicago Homeopathic Medical College	(1901)	75
Johns Hopkins University	(1897)	100
College of Physicians and Surgeons, Boston	(1923)	77.6
Harvard University	(1921) 82.2, (1922) 76.2, (1923)	79.5
Middlesex College of Medicine and Surgery	(1923)	76.7
Tufts College Medical School	(1922) 79, (1923, 2) 78.3, 80	
St. Louis Coll. of Physicians and Surgeons	(1922) 75, (1923)	78.4
Temple University Department of Medicine	(1922)	75.9
University of Naples, Italy	(1915)*	78.2
Syrian Protestant College, Beirut, Syria	(1888)	75
Osteopaths	76.5, 77.9,	79.2

FAILED College	Year Grad.	Per Cent.
College of Physicians and Surgeons, Boston (1923, 2) 69.7, 71.6	(1918)	68.1
Middlesex College of Medicine and Surgery (1923, 3) 67.5, 67.5, 70.9	(1922, 2) 66, 72.2,	
St. Louis College of Physicians and Surgeons 63.9, 70.5, 71.3, 73.5	(1923, 5)	58.9,
Long Island College Hospital	(1922)	56.8
University of West Tennessee	(1917)	43.1
University of Naples, Italy	(1906)* 67.9, (1919)*	54.2
University of Geneva, Switzerland	(1919)*	71.5
Osteopaths	67.5, 67.7,	71.8

* Graduation not verified.

Book Notices

DISEASES OF THE RECTUM AND COLON and their Surgical Treatment. By P. Lockhart Mummery, F.R.C.S., England, M.A., M.B., Senior Surgeon to St. Mark's Hospital for Cancer, Fistula, and other Diseases of the Rectum. Cloth. Price, $8 net. Pp. 872, with 215 illustrations. New York: William Wood & Co., 1923.

Twenty years in a special field is the basis for this record of experience. Great advances in surgery of the rectum and colon have occurred in that time as a result of aseptic technic, improved methods of anesthesia, and better after-treatment. The difficulty in securing aseptic healing arises from the fact that it is not easy to cleanse the rectal mucosa. The author has abandoned "slop-diet" for his patients. He feeds them as if no operation had been performed, and finds gas-pains, flatulence and insomnia far less frequent. The author for some years has used spinal or regional anesthesia exclusively for all the more serious operations on the rectum. It is not so much a method, he says, as a series of principles by the coordination of which the desired result is obtained. All the symptoms of "autointoxication" ascribed to intestinal stasis, says the author, may be produced without intestinal stasis being present. On the other hand, there are patients in whom the large intestine has completely lost its function and is merely an inactive sac in which the products of digestion accumulate and decompose. The author recently removed the whole of the large intestine and cecum from a patient. Microscopic sections from different levels from the wall showed no trace of muscular tissue. The muscular wall of the bowel had completely disappeared. The colon was a mere sac into which everything passed, and the enormous abdominal distention from accumulated gases atrophied the abdominal muscles. Removing the colon in this case permitted the abdominal muscles to become almost normal in three months and the bowels to act without difficulty. Hyperplastic tuberculosis of the colon, a rare form first described in detail by Hartman and Pilliet in 1891, is covered more fully than usual in this book. It is of practical interest, for two reasons: It is a manifestation of tuberculosis unlike lesions usually found in other organs, and it is commonly mistaken for carcinoma. The author considers hyperplastic tuberculosis of the colon definitely a surgical disease. It gives rise to tumor formation and stricture of the bowel.

PROBLEMS IN DYNAMIC PSYCHOLOGY. A Critique of Psychoanalysis and Suggested Formulations. By John T. MacCurdy, M.D., Assistant, the Psychiatric Institute of the New York State Hospitals. Cloth. Price, $2.50. Pp. 383. New York: The Macmillan Company, 1922.

The author describes this book as "a discussion of some of the fundamental problems which must be solved before our knowledge in this field may be accurately systematized." The purposes, he states, are twofold: "On the one hand it is an attempt to show from demonstrations of the limitations and inconsistencies of Freudian formulations that a broader system is needed, while, on the other, an attempt is made to outline some tentative hypotheses to make good this need." We are in entire accord with the author when he says that "the most practical form for tribute of gratitude to Freud to take is the dispassionate criticism of his work." This type of criticism has been sadly lacking in America, where prejudice has led more to ridicule than to analysis. If for no other reason than pointing this out, this book is of great service. The criticism of freudian formulations are based on a careful and exhaustive examination of Freud's theoretical writings wherein it was found that his fundamental principals were not internally consistent. The author's studies in the psychology of epilepsy and war neuroses seemed to demon-

strate that instincts other than the sexual could be responsible not merely for isolated symptoms but for the very core of the abnormal reaction. The first part of the book, dealing with the criticisms of freudian formulations, includes chapters on the unconscious and the wish, instincts, sex repression and ego libido, dementia praecox and paranoia, the actual neuroses, and dreams. This part is a forceful representation of careful thought and dignified criticism which points the way to a logical rationalization of existing theories. The constructive part of the book, modestly claimed to have but temporary and suggestive value, is replete with information and ideas, which, although not universally acceptable in their entirety, have much value and interest. The work of Ferenczi, Burrow and Rivers is analyzed, and merited attention is directed to the work of Rivers, whose untimely death stopped his researches in anthropological problems. As is well known, the more clearly a subject is understood, the more simply can it be presented; and this book can, for the most part, be easily understood, which cannot be said of much of the literature dealing with abnormal psychology.

INÉGALITÉ PUPILLAIRE ET TUBERCULOSE PULMONAIRE. Par le Docteur W. Jullien. Paper. Pp. 117, with 14 illustrations. Paris: Amédée LeGrand, 1923.

This is a study of pupillary inequality in connection with pulmonary tuberculosis. The author takes up the anatomy and physiology of the iris and then offers his experimental study, based on seventy cases. He points out the difficulty which others have experienced in their endeavor to determine the inequality of one or the other pupil. After showing the various methods of such determination, he has decided that mydriasis is of the most use. It was found that among sixty-one cases of unilateral pulmonary tuberculosis, there were forty-two which presented equal pupils, while nineteen showed inequalities (anisocoria). Among bilateral cases, inequality of the pupils was found only five times. After some further discussion, the author concludes that there is no hard and fast connection between a pupillary inequality and pulmonary tuberculosis, whether on one or on both sides. In almost the closing paragraph the statement is made that "it is syphilis which holds the place of preponderance in the causation of anisocorias." This should give us food for thought.

ENDOCRINE DISEASES INCLUDING THEIR DIAGNOSIS AND TREATMENT. By Wilhelm Falta. Translated and edited by Milton K. Meyers, M.D., Neurologist to the Northern Liberties Hospital, Philadelphia. With a Foreword by Sir Archibald E. Garrod, K.C.M.G., M.D., F.R.C.P., Regius Professor of Medicine, Oxford University. Third edition. (The Previous editions bore the title of The Ductless Glandular Diseases.) Cloth. Price, $8.50. Pp. 669, with 104 illustrations. Philadelphia: P. Blakiston's Son & Co., 1923.

In a field such as that of endocrinology in which clinical and laboratory research are today quite extensive, no textbook can do more than compile an abstract of extensive literature and offer editorial judgments. The present edition of Falta is greatly improved by the editorial notes of the American editor, who calls attention to recent work, overturning many of the hypotheses and conclusions originally presented by Falta. In this way, the Falta book becomes a fairly safe guide for the practitioner who is anxious to be honest, if not ultraconservative, in his endocrinology studies. The book is completed by an appendix giving extensive bibliographies in each of the subjects discussed.

"PANÁRKETON." Agenda Médica Salvat. Prefacio por el Dr. Augusto Pi Suñer, Catedriático de la Facultad de Medicina de Barcelona. Cloth. Pp. 332. Barcelona: P. Salvat, 1923.

This "Panárketon," or "Agenda Médica," is a sort of "greater" visiting list or physician's diary, aiming to encompass, in a book of pocket size, data to which the busy physician may turn in an emergency. Besides the usual lists of drugs, forms of poisoning, and tables of arteries and bones, there are offered a description of the Wassermann test, a summary of first aid medicine, surgery, obstetrics and ophthalmology; diet in various diseases, and even an outline of necropsy and embalming. As a mere aide-mémoire, a book of this kind may prove useful. It should not, however, be taken, as pointed out by by Dr. Pi Suñer in his introduction, as a substitute for thorough medical training.

Miscellany

THOMAS YOUNG (1773-1829), PHYSICIAN AND SCIENTIST*

DAVENPORT HOOKER, PH.D.
Professor of Anatomy, University of Pittsburgh School of Medicine
PITTSBURGH

One hundred and fifty years ago on the 13th of June, last, there was born at Milverton, Somersetshire, England, an infant who, in the fifty-six years of his life, was destined to leave his pioneer mark on a wider range of subjects than any other man has ever done. Thomas Young, born June 13, 1773, of Quaker parentage, made basic contributions to the following imposing array of scientific subjects: ophthalmology (the theory of the mechanism of accommodation, the theory of color vision and the science of physiologic optics); physics (the theory of light, the principle of interference, the cohesion of fluids, chromatics and physical optics); Egyptology (the first establishment of letter-values in the hieroglyphic alphabet); political science (the algebraic expression of the value of life, tables of mortality and a theory of life assurance); medicine (heart and arteries); music; shipbuilding, and hydraulics.

In spite of this intellectual contribution, Thomas Young, too erudite to be considered reliable as a practical physician by his patients, is described by Tscherning (1907) in these words: "He was a man of the world, frequented the best society in London, and was highly appreciated there. Arago states that of all existing instruments there were only two he would not play. When young, he was very fond of dancing, and in horsemanship he pushed his cleverness so far that one would hardly think it possible. As the result of a wager he learned at Göttingen to stay on the back of two horses running at full speed in the ring."

This remarkable genius deserves at least a passing comment on the one hundred and fiftieth anniversary of his birth. For the summary of his life I am indebted to a number of sources, notably to Tscherning's Thomas Young Oration of 1907.

Thomas Young learned to read when 2 years of age; at 4 he had read the Bible and Gulliver's Travels; at 6 he began Latin; before he was 13 he had made an efficient microscope and a telescope, doing the necessary lathe turning and lens grinding himself, and, in his thirteenth year (1786) he wrote an analysis of the Greek schools of philosophy.

When he was 9, he was sent to school at Compton, in Dorsetshire, where he undertook a study of Greek, Latin, mathematics, Italian, French, Arabic, Persian and Hebrew, in addition to his physical and optical studies, which were a hobby induced by his interest in botany. In 1787, he had learned all (and more than) his teachers could impart. He became tutor to the grandson of a Mr. Barclay, a wealthy gentleman of Youngsbury in Hertfordshire, but his most outstanding success in this field was his tutoring of himself, for, during this period (1787-1792), he studied classics, French authors, Euclid's Conic Sections, Simpson's Fluxions and Newton's Principia and Optics.

At this time, his uncle, Dr. Richard Brocklesby, a prominent physician of London, urged Thomas Young to enter on the study of medicine. In the autumn of 1792, Young went to London and started his medical studies, coming under the influence of such men as Baillie, William Cruikshank and John Hunter.

In 1793, when barely 20, he wrote "Observations on Vision," which was published in the Philosophical Transactions of the

*Read before the Lambda Alpha Medical Society, New Haven, Connecticut, Oct. 4, 1923.

Royal Society of London (1793, Part 2, page 169) and which paved the way for his election as a Fellow of the Royal Society in 1794 while he was still in his twentieth year and was still a medical student.

In this, his first paper, he maintained two theses: first, that accommodation of vision is due to a change in the convexity of the surfaces of the crystalline lens; second, that this change is produced by the muscular nature of the lenticular fibers which formed the musculus crystallinus. In the first of these theses, he followed the work of Descartes (1637), Pemberton (1719) and Camper (1746), but advanced further evidence. This contribution, enlarged in 1801, is one of the most important made by Young.

His second thesis, the muscular nature of the crystalline lens, was disproved in 1794 by Home, though Young followed in the footsteps of Leeuwenhoek and Pemberton.

After his election to the Royal Society in 1794, Young went to Edinburgh to continue his medical studies under John Bell, Black, Duncan, Gregory and Munro. The following year (1795), he went to Göttingen, from which university he received the degree of doctor of philosophy, April 30, 1796, with a dissertation "De corporis humani viribus conservatricibus."[1]

While in Göttingen, he was noted for his sound scholarship and his ability in wooden horse vaulting and live horse riding. As an aside, he devised a universal alphabet of forty-seven letters which he regarded as completely adequate to express any language in writing.

In 1797, Young's uncle, Dr. Brocklesby, died, leaving to him his house, his collections and £10,000. The bequest enabled him to continue his investigations without too great interference from his practice, which he began in 1800.

In 1799, Young published the first of three papers on "Sound and Light" (1799-1802), in which he attacked Newton's corpuscular emanation theory of light, revised Huygens' undulatory theory and placed it on a firm foundation. He was severely attacked by the Newtonians, and wrote an adequate reply to the later Lord Brougham's ridiculing critique, but it was utterly ignored.

In 1801, he published his greatest contribution to physiologic optics, "On the mechanism of the eye," in the Philosophical Transactions of the Royal Society (1801, Part 1, page 23), of which Helmholtz many years later made the comment that it was "a work of remarkable insight and ingenuity which was fully qualified to settle the discussion concerning accommodation." Helmholtz' further comment, "It is difficult to understand, however, on account of its brevity and, furthermore, assumes a complete knowledge of mathematical optics," strikes the keynote of Young's unfortunate failure to impress himself on his generation and his own consequent dissatisfaction with his work.

Tscherning, speaking of this phase of his life, says: "His scientific activity gave him rather little satisfaction, partly through his own fault. He had the idea, for which he was indebted to his Quaker education, that every man was able to do what every other man had done, believing that there is in reality very little difference between the intellectual gifts of different men. One might fancy that this idea had guided him when he wrote his papers, and that he measured the intelligence of other people with his own, for he used the greatest conciseness, and his expressions are often so obscure that more than one of his readers has used the word 'prophesies' in speaking about his papers. Young compared himself to a personage of Greek mythology (Cassandra), to whom a god had given the gift of foretelling the future, but added that no one should believe in her predictions. His scientific works gave him no satisfaction at all, until Arago and Fresnel discovered him, and he never had the popularity he ought to have enjoyed. Yet today his reputation seems greater on the Continent than in this country [England]."

In his 1801 paper, Young developed the science of perimetry from a rather vague beginning to a very definite position; announced the discovery of ocular astigmatism (the value of which he did not completely grasp) and made a very important contribution to the foundation of the science of physiologic optics.

His methods were ingenious and, in some cases, unique. In combating the idea that the eyeball became lengthened, during accommodation, as a result of the pressure exerted by the extrinsic eye muscles, he performed the following experiment on himself: He slipped a small metal ring into the conjunctival sac at the medial angle of the eye so that it rested against the orbit. He then turned the eyeball so that he looked through the ring across the bridge of his nose, bringing the cornea close to the ring. This prevented any forward movement of the eyeball during accommodation. He then inserted the ring-shaped handle of a very small key between the eyeball and the orbit at the lateral angle of the eye. By pressure on the latter key, it was possible to compress the eyeball between the two metal rings and thus to change the length of the eyeball. Young, however, obtained only a pressure image which extended as far as the point of clearest vision, indicating that he was able to exert pressure on the region of the macula, and noted that straight lines contained within the area of the pressure image appeared slightly bent, owing, no doubt, to a slight indentation of the sclera.

But Young was unable to focus his eye on any subject by changing the length of the eyeball with the key. On the other hand, voluntary alternate accommodation on near and far objects did not move the key, and it is evident that no increase in the length of the axis of the eyeball could occur without forcing the key from its position.

A very pretty proof, but one only to be devised and carried out by an enthusiast.

In 1802, Young published his paper "On the Theory of Light and Color," the third of his series on "Sound and Light" and of itself a remarkable contribution. The Young theory of color vision here advanced was later modified and developed by Helmholtz.

In 1803, Young received the degree of bachelor of physic from Cambridge, and in 1808 the degree of M.D. from the same institution.

About 1805, Young became professor of natural philosophy at the Royal Institution, where he lectured for two years. In 1807 these lectures were published in two quarto volumes entitled "A course of lectures in natural philosophy and the mechanical arts." Almost every branch of physics is considered in them, but their greatest value lies in the discussion of color blindness, the principle of the interference of light and of the electromagnetic theory of light.

To the students who sat under him he appeared an interminable bore, interested in unintelligible minutiae; but to those interested in the subjects treated, the lectures serve as a mine of fundamental facts.

In 1807, Young married Miss Eliza Maxwell. His married life appears to have been very happy. In 1808, he became a fellow of the Royal College of Physicians and, in 1811, physician to St. George's Hospital; but he never prospered in practice, because of his diffidence and erudition.

Worn out by his scientific exertions, apparently rather dissatisfied with life, he died, May 10, 1829, and was buried at Farnsborough.

Two likenesses of him exist. One is the portait painted by Lawrence in 1822, which now hangs in the Royal Institution; the other is a medallion by Chantrey executed after his death and placed in Westminster Abbey.

Of his other contributions to human knowledge I cannot speak here in detail. For the Encyclopaedia Britannica he

1. Phil. Tr. Roy. Soc., London, 1800, p. 46.

wrote the articles on "Bridge," "Carpentry," "Chromatics," "Cohesion" and "Egypt." The Edinburgh *Review* referred to the last of these as "The greatest effort of scholarship and ingenuity of which modern literature can boast." According to Tscherning: "The principal object of the paper is the celebrated Rosetta stone, that is now in the British Museum. It bears the same inscription in three different scriptures, in Greek, in Enchorial scripture, and in Hieroglyphs. The first one was easily read, of the second some words had been deciphered with great difficulty, but no one had been able to understand a word of the third. Here Young showed his immense penetration. He found out that certain signs, surrounded by an elliptical ring, which repeat themselves several times in the hieroglyphical inscription, correspond to the name of Ptolemy in the Greek inscription. In this manner he obtained the first letters of the hieroglyphical alphabet. These helped him to find others, and so he laid down the basis of modern Egyptology." He established the values of i, n, p and t in the hieroglyphics.

Thomas Young laid many foundations on which other men built, as Fresnel in the theory of light; Champollion in Egyptology; Donders in the anomalies of refraction; Helmholtz in the theory of color vision, and many more. Young would have undoubtedly enhanced his personal reputation by sticking to one field, but as a layer of sound foundations in many fields he advanced science as no one else has done.

I have already quoted much from Tscherning, but, as he is probably the greatest living authority on Thomas Young, it may not be amiss to close this brief account with his summary of the catholicity of Young's tastes and breadth of mind. "He himself tells," says Tscherning, "that during his last visit to Paris he went to the Institute one Monday, and had great pleasure in hearing the members of the Academy of Science discussing some theories of optics, based on his own investigations; then he went there on another day and heard the Academy of Inscriptions discussing some of his hieroglyphical discoveries. And although it did not happen, it might very well have happened that he should have heard a discussion on his theory of life assurance in the Academy of Political Science, or a discussion of his theory of music in the Académie des Beaux Arts, or even a discussion about his studies on the heart and the arteries in the Academy of Medicine. I think that the world has never seen anything like that."

TONSILLAR AND RHEUMATIC INFECTIONS

The occurrence of tonsillar infection in cardiovascular disease was investigated by H. S. Starling (*Guy's Hosp. Rep.* **73**:388 [Oct.] 1923). In cases of mitral or aortic diseases or both combined, the incidence of tonsillar infection in patients under 30 was 81.62 per cent., and 61.3 per cent. in patients over 30. Only about one third of these patients gave a history of sore throat. From his observation of these cases of rheumatic heart disease, Starling has been forced to the conviction that tonsillar infection is the chief portal for rheumatic infection, and also, although to a lesser degree, the chief source of infection in such cases. The presence of enlarged lymph glands under the jaw is regarded as a more constant proof of tonsillar infection than the appearance of the tonsils themselves. In the course of rheumatic infection, the earlier the tonsils are removed the greater is the benefit derived. The benefits of the operation are manifested not only in the acquisition of a healthy color, an increase in weight and physical efficiency, but also in the prevention of further infection of the endocardium and an apparent mitigation of the damage already suffered by it. The operation also effects the removal of an infective focus, the toxin from which is prejudicial to the heart muscle as well as to the whole system. After the operation, the patient, whenever possible, should be placed in an environment of open air and sunshine, in order that his general nutrition may be raised to the highest level.

Medicolegal

Validity of Restrictions on Prescribing Alcohol

(United States v. Freund (U. S.), 290 Fed. R. 411)

The United States District Court in Montana, in ruling on a demurrer, says that so far as the provisions of the National Prohibition Act involved affect the property right of physicians to practice their necessary calling, and encroach on the state's police power of regulation, they are in exercise of federal power, to which property rights and police power always yield. Therein Congress has not undertaken to forbid the use of alcohol as a therapeutic agent, but, even as all legislation brought to the attention of or known to the court, it recognizes the extensive use, if not value, of alcohol in medical practice, the faith of a large part of the profession and people therein, and it sanctions its continued use, whether or not it could have prohibited it. This, however, is coupled with regulations and restrictions which in part, it is believed, are arbitrary and unreasonable interferences with the lawful property and personal right of physicians to prescribe alcohol for remedial purposes, and of ailing people to receive it. They purport to limit a physician to 100 prescriptions for use in any period of ninety days, save for some "extraordinary reason." This is nothing but an arbitrary restriction on the number of patients a physician shall treat in ordinary course of circumstances, or is an unreasonable mandate to malpractice in respect to them, and is invalid. So, too, they purport to determine the dosage of alcohol a physician may prescribe, and from him any patient shall receive, viz., not to exceed one-half pint for use within any period of ten days. If therapeutics were an exact science, if diseases and their courses were of determined diagnosis and invariable prognosis, if patients were constituted alike and affected alike, if remedies could be admeasured by fixed rule, this provision would be valid. But since in respect to all these factors the truth is otherwise, every patient presenting to the physician a different problem for solution, this provision of the statute is invalid. It is an extravagant and unreasonable attempt to subordinate the judgment of the attending physician to that of Congress, in respect to matters with which the former alone is competent to deal, and infringes on the duty of the physician to prescribe in accord with his honest judgment, and on the right of the patient to receive the benefit of the judgment of the physician of his choice.

It may be that, even as legislation for reasons of health can compel vaccination, it might in like behalf extend prohibition to alcohol for therapeutic uses. But, so long as legislation tolerates or sanctions such uses of alcohol, the duty and judgment of the physician, the necessity and welfare of the patient, and the right of both cannot be subjected to arbitrary and unreasonable legislative interference, dictation and infringement, like the statutory provision last aforesaid. The physician, with power to begin a course of treatment, must have like power to finish it. His judgment to begin must be unrestricted to conduct and finish. Otherwise there may be dangers greater than are involved by the denial of any power, for the latter might be compensated by substitutes. These statutory provisions to restrain the judgment of physicians in the exercise of power to prescribe alcohol deprive physicians and patients of liberty without due process of law, within the meaning of the Fifth Amendment to the Constitution of the United States, and are unconstitutional.

No doubt Congress was inspired by consciousness of the well known abuse of alcohol in the guise of remedies. In that there is justification for reasonable regulations, and the statute contains them: viz., that no physician can prescribe alcohol unless he has secured a permit from the commissioner of internal revenue, and has given bond; that he shall prescribe only in good faith as necessary medicine, and only on official forms supplied by the commissioner, except in emergency; and that he shall keep a record thereof. In addition, for violations, not only is the physician subject to criminal penalties, but the commissioner may revoke the permit and thus deprive him of the right to prescribe alcohol further.

These regulations are appropriate to the prohibition of alcohol as a beverage, are adapted to that end, and are valid. Of them there can be no just complaint. They and their like ought to suffice to restrain therapeutic uses of alcohol within legitimate bounds. If a physician cannot be trusted wholly, he should not be trusted partially. If he is disposed to abuse the prescription of alcohol, he can do so as well with 100 prescriptions and one-half pint as with more. At most it is a mere difference in degree, wherein the restrictions invalid as aforesaid might seriously affect physician and patient, and little or none prohibition.

Physical Examination in Breach of Promise Case

(Welch v. Verduin (N. Y.), 201 N. Y. Supp. 324)

The Supreme Court of New York, Oswego County, says that the defense set up to this action for breach of promise of marriage was that the plaintiff was malformed and incapacitated from entering into and fulfilling the usual marital relation. Those facts, if proved, would probably be a complete defense to the action. The marriage, if contracted, could be annulled on those grounds, and no action will lie for breach of the contract, if the plaintiff was incapable of contracting a valid marriage on her part. For the purpose of procuring evidence to substantiate his defense, the defendant moved for an order requiring the plaintiff to submit her person to a physical examination by physicians chosen by the court for that purpose. But it must be conceded that the power to make such an order is not conferred on the court by the provision of the statute that in an action to recover damages for personal injuries, if the defendant shall present satisfactory evidence that he is ignorant of the nature and extent of the injuries complained of, the court shall direct the plaintiff to submit to a physical examination. In the absence of such a statute, it was held in *McQuigan* v. *D., L. & W. R. Co.*, 129 N. Y. 50, 29 N. E. 235, that the court did not have power, in advance of the trial of an action for personal injuries, to compel the paintiff, on the application of the defendant, to submit to an examination of his person by surgeons appointed by the court, with a view to enabling them to testify on the trial as to the existence or extent of the alleged injury. The contention that the binding authority of that decision must be limited to actions for personal injuries cannot be sustained. Moreover, the exception to the general rule applicable to annulment cases was there considered and explained as being based on that public policy which demands the most extraordinary care and the highest proof before the court will disturb the marriage relation; consideration being had first to the interest of the public, rather than the desires of the parties themselves. A personal examination is a serious invasion of the right of privacy, and the limitation in the statute is strong evidence of the legislative intent to permit such invasion only in the cases mentioned therein. The court is convinced that it is without power to make the order sought by the defendant, and his motion therefor is denied.

Death from Pneumonia After Inhalation of Gas

(Columbine Laundry Co. et al. v. Industrial Commission et al. (Colo.), 215 Pac. R. 870)

The Supreme Court of Colorado, in affirming a judgment that affirmed an award by the industrial commission of compensation, under the workmen's compensation act, for the death of an employee, says that he was employed by the laundry company as an automobile mechanic. One day, when the weather was rather cool and the garage was kept closed, he worked from about 8 a. m. until noon on the ignition system of a truck. In the course of his work he would start and stop the car, and in doing this he inhaled exhaust gas from the machine. At 1:30 p. m., he was taken sick, but worked the following day, going home earlier than usual and going to bed, where he remained until he died six days later from pneumonia. This, in effect, was the finding of a referee, who was of the opinion, from the facts, that the employee inhaled an extra large amount of automobile gas during the forenoon in question; that his condition during the afternoon and the remainder of that week should be attributed to the inhalation of the gas; also that this was an accident as defined by law; that it so weakened the man's vitality that he was unable to throw off the pneumonia; and that his death might be ascribed to his accident. Two physicians had testified that poisoning from gas was a cause of pneumonia, while one of them had explained that such poisoning would put this employee in the condition that he could not resist the pneumonia germs. The court thinks that there was evidence to support the conclusion of fact that the man's condition could and should be attributed to the inhalation of gas.

It was contended that death was not caused by accident, and *Prouse* v. *Industrial Comm.*, 69 Colo. 382, 194 Pac. 625, was cited on the proposition that the accident must be one traceable to a definite time, place and cause. It was urged that this employee inhaled gas at other times. The findings, however, were sufficiently specific to show that the injury resulted from the work of the forenoon in question, when the weather was cool, the garage door closed, and the employee inhaled "an extra amount of auto gas." The Prouse case was also cited on the rule that the accident must be an unexpected occurrence, but there was evidence that the occurrence involved here was unexpected. Similar work was done in the garage at other times without ill effects. On the date in question there was an extra large amount of exhaust gas. The presence of gas could be expected, but not the injury resulting from it. The accident was not the presence of gas, but the effects produced by it, and these were unexpected. Moreover, the court does not agree with the contention that the pneumonia, and not the accident, must be regarded as the proximate cause of the death. Pneumonia was the immediate cause, but the immediate cause was not necessarily the proximate cause. The proximate cause in this case was the injury that led to pneumonia.

Prosecution for Practicing Without Certificate

(Frazier v. State (Ala.), 97 So. R. 251)

The Court of Appeals of Alabama says that this was the second appeal in this case. From the statute, under which defendant Frazier was prosecuted for practicing medicine without a certificate, it was apparent that one single treatment of any one individual for any disease of human beings would be an offense for which the defendant could be prosecuted and convicted, and that the prosecution would not be required to prove a series of treatments, each treatment administered without the necessary certificate of qualification constituting a distinct offense against the statute. The complaint in this case contained only one count; only one offense was charged. On the first trial, the state, in developing its case, individualized and particularized the specific offense of treating one woman, and on the second trial set out to prove the same offense but ended by proving another distinct offense—that of treating another woman. This, it is held, required a reversal of the judgment of conviction obtained on the second trial, on the ground that the state was held to an election.

But the court does not think that, in a prosecution under this statute, the state must either allege or prove that the person treated in fact had a disease. The statute reads: "Any person who treats, or offers to treat diseases of human beings in this state by any system of treatment, whatsoever," etc. Whether the person receiving the treatment, or offered to be treated, has a disease or not, does not relieve the person treating, or offering to treat, from criminality. The fact that one claiming to be able to treat diseases of the human body offers to treat a person for a disease which that person did not have would be the worst kind of "quackery," and was one of the things aimed at by the statute. Again, if it should be held that the person offered to be treated must, in fact, be affected by the disease offered to be treated, each case would present a case for the highest and most technical investigation, involving diagnoses and other questions of pathology and scientific medicine. Such, certainly, was never in the minds of the legislature.

It is also stated in this case that the question as to whether or not the defendant charged for the treatments had nothing to do with the case. It is in no way an element of the crime denounced by the state. The offense is complete without the making of any charge.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

166: 625-780 (Nov.) 1923

*Physical Findings in Pericarditis with Effusion. R. S. Morris and C. F. Little, Cincinnati.—p. 625.

*Structural and Functional Involvement of Heart Following Acute Respiratory and Other Acute Infections. II. W. R. Hamburger and W. S. Priest, Jr., Chicago.—p. 629.

*Treatment of Hay-Fever, Asthma and Other Manifestations of Allergy. W. W. Duke, Kansas City, Mo.—p. 645.

*Nonspecific Versus Specific Therapy in Bronchial Asthma. N. S. Schiff, New York.—p. 664.

*Duration and Magnitude of Hypoglycemia After Insulin. E. L. Sevringhaus, E. Kirk and H. J. Heath, Madison, Wis.—p. 677.

*Sixty-Four Cases of Diabetes Mellitus Treated with Insulin. L. Jonas, Philadelphia.—p. 687.

*Treatment of Diabetic Coma with Insulin. N. B. Foster, New York. —p. 699.

*Ileocecal Incompetence. Analysis of 1,000 Cases. N. W. Jones, Portland, Ore.—p. 710.

Epidemiology of Acute Respiratory Infections, As Deducted from Mild Epidemic Occurring in 8th Corps Area, March, 1922. L. B. Bibb, Carlisle Barracks, Pa.—p. 731.

*Use of Gentian Violet in Treatment of Empyema. R. C. Davis, Rosedale, Kans.—p. 743.

Physical Findings in Pericarditis with Effusion.—This report is the result of a continuation of Morris' work, but instead of using cadavers observations were confined to patients ill with pericarditis. The cardiohepatic angle in pericardial effusion is usually an acute angle. The area of relative cardiac dulness in effusion is pyriform and generally extends upward to the first interspace. Widening of the area of dulness and of the shadow in the first and second interspaces occurs relatively early in effusion and is best determined with the patient in the recumbent posture. Shifting dulness (i. e., a narrowing of the dull area, with a corresponding decrease in width of the shadow over the great vessels when the patient is changed from the recumbent to the erect posture) has proved to be the most reliable physical sign of fluid in the pericardium. Widening of the dull area and of the shadow to right and left above the diaphragm when the patient is erect is found with fluid. There is an absence or marked decrease of visible pulsation in the shadow fluoroscopically in pericardial effusion. Dulness at the angle of the left scapula is often present with a large accumulation of fluid in the pericardium.

Involvement of Heart Following Acute Infections.—A reconsideration of eight cases of postinfluenzal cardiac disease, first observed and reported by Hamburger in 1920-1921, shows five completely recovered, two not traceable and one unimproved. Eight new cases of cardiac involvement following acute respiratory infection present evidence of both structural and functional involvement, half predominantly structural, half functional. Diastolic murmurs, enlargement of the heart to the left, swelling and tenderness of the liver, edema of ankles and diminished urinary output, auriculoventricular and bundle branch block serve as criteria of structural diseases; palpitation, tachycardia, precordial pain, nervousness, depression and anxiety states are suggestive of functional involvement; breathlessness, cyanosis, weakness, exhaustion and fatigue are of indeterminate interpretation and significance. Hamburger and Priest emphasize that the possibility of coexistent structural and functional disease should be borne in mind in a survey of any postinfectious heart case. Treatment directed toward amelioration of both types of symptoms offers not only the most favorable chance of recovery, but may be of differential diagnostic value. Delayed conduction time, partial, complete or bundle branch block occurring at the height of an acute respiratory infection may be interpreted as structural heart involvement. The fact that such findings may be based on extremely slight or negative histologic findings and are transitory in character does not of itself speak against this view. The authors emphasize the coexistence of structural and functional involvement of the heart (following influenza) in the same patient. Structural involvement is often evident at first, may be entirely overlooked and is often extremely transitory. Functional involvement appears later, often dominates the clinical picture and usually requires a longer time for relief.

Treatment of Hay-Fever, Asthma and Other Allergic Conditions.—The numerous manifestations of allergy, such as hay-fever, asthma, the dermatoses, the gastro-intestinal, urologic and neurologic symptoms, urticaria, angioneurotic edema, hypotension, etc., Duke asserts can be treated along five different lines, namely, avoidance or removal of the specific cause of illness, or of contributory causes, specific protein treatment, nonspecific protein treatment, and symptomatic treatment. Avoidance or removal of the specific cause is the method of choice when this method can be used. Specific protein treatment is the method of choice when the specific cause of illness is known, but cannot conveniently be avoided, namely, in the case of sensitiveness to the common fall pollens and to cooked egg, milk, or wheat. When the specific cause of illness is not known or cannot be removed or treated specifically, nonspecific protein treatment is worthy of trial. This can be accomplished best, Duke believes, through the injection of colon bacilli subcutaneously or in very small doses intravenously. Epinephrin, pituitary extract and atropin are useful symptomatic remedies well adapted for emergency use and for temporary use while the more lasting methods of treatment are being instituted. The results of pollen therapy in the treatment of pollen hay-fever and asthma are good. The best results are obtained through the use of pollen extract subcutaneously, combined with local applications of pollen extract to the conjunctiva and nasal mucous membrane.

Nonspecific Protein Therapy for Asthma.—Schiff is of the opinion that a nonspecific element enters largely into the benefits derived from specific desensitization. The judicious use of nonspecific proteins is a valuable adjunct to the treatment of bronchial asthma and should be used more or less as a routine procedure. Milk is the nonspecific agent of choice because of its ready supply and ease of preparation. The important factor in the use of nonspecific proteins as a routine measure is the avoidance of anaphylaxis.

Hypoglycemia After Insulin.—The treatment of diabetics with small doses of insulin at intervals of not less than six hours is preferred by Sevringhaus et al. to the use of larger doses at very long intervals, or of smaller doses at too short intervals. In normal human subjects the extent and the duration of the hypoglycemia after the injection of insulin are so variable that the result cannot be predicted from the dose per kilogram of body weight.

Insulin in Treatment of Diabetes.—The effect of insulin treatment in sixty-four diabetics is discussed by Jonas. Three cases of diabetic coma with recovery under insulin are reported and two are described in detail. The value of insulin treatment during intercurrent infection in diabetes is noted. The blood sugar concentration was measured at frequent intervals throughout a day in four patients on insulin treatment and the resulting curves constructed. The time relations apparent in the effect of insulin and of the carbohydrate feedings are charted and certain implications as to the timing of the insulin dosage are discussed. A delayed gain of weight on insulin therapy is noted.

Insulin for Diabetic Coma.—Fifteen cases of diabetic coma have been treated by Foster with insulin. Of these, eight patients recovered from the coma and of these eight five are still alive.

Ileocecal Incompetence.—Jones asserts that ileocecal incompetency occurs without symptoms in a moderate percentage of healthy persons. The majority of the instances (80 per cent.) occur in conjunction with a mobile cecum. In such persons the degree of regurgitation is usually small. The incompetency is of frequent occurrence in persons who have abdominal distress. A small number of ileocecal regurgitation cases, with and without mobile cecum, are found in which neither the stasis nor the symptoms of it can be removed by dietetic measures alone. The end-results following the surgical treatment of such cases justify the surgical measures employed. The operative procedures alone do not relieve the

patient of his distress. They merely place the patient back into the large group of relievable cases which depend on dietetic and reconstructive methods of treatment for their cure.

Gentian Violet in Treatment of Empyema.—Eighteen cases of empyema are reported by Davis that were treated by the use of aspiration and injection of an aqueous solution of gentian violet, one half as much solution being injected as fluid removed, fifteen cases being treated while the disease was in the seropurulent and early purulent stage and three in the encapsulated stage. In the three cases which had organization of the exudate, from 0.25 to 0.5 or 1 per cent. chlorazene, in small amounts, was injected to dissolve the exudate. Procain, 0.5 per cent., was used locally to anesthetize the skin and peripheral pleura. This method can be used successfully both in the early and late cases, but is especially advised in the acute cases of empyema before encapsulation and while pneumonia is still present. Davis recommends the use of gentian violet in the treatment of all acute empyemas, or in all empyemas in which the fluid is seropurulent, which indicates that adhesions are not formed and encapsulation has not taken place and pneumonia is still present. The surgical mortality in these cases is especially high. By this method a certain number of cases will clear up without further treatment. If they do not clear up, no time is lost and the patient is in a better condition for surgical drainage when the proper times comes.

American Journal of Public Health, Detroit

13: 897-988 (Nov.) 1923

Relation Between Our Health and Our Environment. Prevalence of Disease in Detroit with Reference to Influence of Dwellings Upon Disease. W. F. Walker, Detroit.—p. 897.
Economics of Health Supervision in Industry. B. L. Wyatt, Quebec. —p. 914.
Do Height and Weight Tables Identify Under-Nourished Children? L. I. Dublin and J. C. Gebhart, New York.—p. 920.
Place of Mental Hygiene in Schools. W. L. Treadway, Boston.—p. 928.
Pathogenic Streptococci and Milk Pasteurization. H. J. Sears and R. L. Benson, Portland.—p. 937.
Organic Heart Disease—Its Distribution and Menace. C. V. Craster, Newark.—p. 940.

Archives of Ophthalmology, New Rochelle, N. Y.

52: 525-629 (Nov.) 1923

Amebic Iritis Occurring in Course of Nondysenteric Amebiasis. L. Mills, Los Angeles.—p. 525.
Chronic Gonorrheal Prostatitis, Possible Etiologic Factor in Certain Inflammations of Eye. Report of Cases. A. H. Thomasson, New York.—p. 546.
Conjunctival Apron or Safety Flap in Cataract Extraction. Plea for Its Adoption as Routine Procedure. J. Wolff, New York.—p. 554.
New Operation for Ptosis with Shortening of Levator and Tarsus. L. DeBlaskovics, Budapest.—p. 563.
Iridectomy in Glaucoma: New Technic. E. Török, New York.—p. 574.
Inflammatory Pseudotumor of Orbit. W. L. Benedict and M. S. Knight, Rochester, Minn.—p. 582.

Atlantic Medical Journal, Harrisburg, Pa.

27: 55-124 (Nov.) 1923

Broader Viewpoint. A. J. Simpson, Chester.—p. 55.
Laurelton State Village and Pennsylvania's Problem of Mental Deficiency. M. M. Wolfe, Laurelton.—p. 56.
House Dust in Asthma. G. P. Meyer, Philadelphia.—p. 59.
Management of Heterophoria. W. Zentmayer, Philadelphia.—p. 61.
*Rôle of Nutrition in Etiology, Course and Prevention of Mental Disorders. W. W. Richardson, Mercer.—p. 65.
*Treatment of Epidemic Encephalitis. G. Wilson, Philadelphia.—p. 68.
Roentgen-Ray Studies of Chest in Infants and Children. H. K. Pancoast, Philadelphia.—p. 70.
American Medical Association. C. W. Richardson, Washington.—p. 75.

Rôle of Nutrition in Mental Disorders.—In a study made by Richardson of a group of presumably curable mental cases, 75 per cent. gave a history of recent loss of weight. Eighty-five per cent. were below normal standard weight on admission. A lowered state of nutrition and starvation often affect the mentality, but chiefly in the emotional sphere. Modern metabolism studies serve to emphasize the importance of fat derivatives in the structure of brain tissue. Hence, fat starvation and a great diminution of the stored fats in the tissues cannot fail to affect brain function in some degree. Case studies indicate that a gain in weight must be produced in at least certain mental cases before mental improvement can occur. This is probably true in most cases. An unusual case is reported in which an emaciated woman tripled her weight within one year. The importance of mental hygiene and of a proper insistence on a normal state of body nutrition is emphasized.

Treatment of Epidemic Encephalitis.—In the treatment of the sequelae of epidemic encephalitis, of which the parkinsonian syndrome is by far the most common, no treatment seems to have much influence in stopping the tendency of the case to run a downhill course. Massage, hydrotherapy and passive movements apparently do more good than anything else. Phenobarbital (luminal) and scopolamin either alone or in combination, frequently lessen the tremor, decrease the rigidity and make the patient feel better.

California State Journal of Medicine, San Francisco

11: 455-498 (Nov.) 1923

Birth Rate: Factor in National Welfare. L. A. Emge, Stanford.—p. 455.
*Incidence of Venereal Disease in Patients Suffering with Sterility. A. B. Spalding, Stanford.—p. 457.
Significance of Cervical Pathology in Sterility. A. V. Pettit, Stanford. —p. 459.
Adnexal Organs in Relation to Sterility. C. W. Anderson, Los Angeles. —p. 460.
Tumors and Displacements in Relation to Sterility. F. W. Lynch, San Francisco.—p. 463.
What Relation Exists Between Endocrine Glands and Sterility? F. M. Pottenger, Monrovia.—p. 465.
Diagnosis and Treatment of Sterility. F. M. Loomis, Oakland.—p. 466.
*Changes in Weight in Treated Syphilis. I. C. Sutton, Santa Ana.—p. 470.
Case of Sporothrichosis. V. R. Mason and K. P. Frost, Los Angeles. —p. 471.
*Post-Arsphenamin Eruptions. Etiology and Treatment. H. E. Miller, San Francisco.—p. 473.
Management of Fracture of Base of Skull. H. H. Kerr, Washington, D. C.—p. 477.
Place of Manipulation and Corrective Gymnastics in Treatment. R. T. McKenzie, Philadelphia.—p. 480.

Incidence of Venereal Disease in Cases of Sterility.—Of 200 patients complaining of sterility, who were examined by Spalding, 16 per cent. gave a positive Wassermann reaction. The positive Wassermann reaction was more frequently found in cases of primary sterility than in cases of secondary sterility. Fourteen per cent. showed infections of Skene's glands; 50 per cent. had cervicitis, and 30 per cent. gave evidence of tubo-ovarian infections. Sixteen, or 50 per cent., of thirty-three husbands examined showed a condition of aspermia.

Changes in Weight in Treated Syphilis.—In a series of twenty-eight patients treated by Sutton with bismuth and silver arsphenamin, careful records were made to determine the effect of the treatment on body weight. According to the medico-actuarial standards of weight and height, they were nearly all underweight. An intramuscular injection of bismuth was given three times a week until eighteen injections were given, at which time the weight was again recorded. After a four weeks' rest from treatment, the patient was again weighed. When bismuth was given, the weight usually decreased; when silver arsphenamin was given, it increased. There were several exceptions, usually in patients with central nervous system involvement. After treatment with silver arsphenamin, nearly all patients weighed more than at the beginning of the treatment, though they did not all recover completely the loss incurred during treatment with bismuth. Records of weight made from time to time after treatment was finished, however, showed in nearly all patients a permanent substantial gain. Sutton says that patients suffering from syphilis, almost without exception, need a fuller, richer diet. He put them on a large carbohydrate and fat diet, with all the protein they can take care of. By systematic overfeeding, the patients gain weight and feel much improved. Food phobias and constipation disappear, and they emerge from a vigorous course of treatment physically and clinically improved.

Postarsphenamin Eruptions.—Of eighteen patients with arsphenamin eruptions seen by Miller, seventeen of them developed early in the course of the administration of the drug. Seborrheic dermatitis in a patient seems to predispose

him to postarsphenamin eruptions. Arsphenamin eruptions occur as frequently after neo-arsphenamin as after arsphenamin. Sodium thiosulphate intravenously and orally greatly shortens the course of the eruptions. Further antisyphilitic treatment in the severe case of postarsphenamin dermatitis should consist only of mercury and iodid.

Colorado Medicine, Denver

20: 203-326 (Nov.) 1923

Historical Review of Child Hygiene Work. R. P. Forbes, Denver.—p. 307.
Routine Wassermann Tests in a Thousand Nervous and Mental Cases. C. S. Bluemel, Denver.—p. 310.
*Study of Flügge's Droplet Infection Theory Applied to Pulmonary Diseases. H. J. Corper, Colorado.—p. 310.
Possibility of Cure in Habit Constipation. W. V. Gage, Worland, Wyo.—p. 316.

Mode of Infection of Lung in Tuberculosis.—In considering the mode by which pulmonary infection occurs from external sources, Corper deems it unwise, with present knowledge, to cling to one conception but rather to give credence to reasonable possibilities, and also not to lose sight of occurrences that are possible during the temporary abnormal periods which enter into every-day life. In so far as the entrance of disease-producing micro-organisms into the respiratory tract is concerned, the question seems to resolve itself in one of its phases into the important problem as to whether the micro-organisms will resist drying to an extent sufficient to permit their being raised in dust form without loss of viability. The entrance of micro-organisms into the lungs with inhaled dust is established on a firm scientific basis, and in tuberculosis, when conditions are suitable, it cannot be doubted that the tubercle bacillus can thus enter. In so far as direct moist droplet infection of the lungs is concerned, it must be admitted that this is also a plausible possibility, but that this is more important than dust infection in the ultimate production of pulmonary infection cannot justly be contended. The detailed conditions in each case, rather than the mode, would seem to determine the outcome, and external physical factors play an important determining part. Viewed from the purely hygienic standpoint, it seems safer with our present incomplete knowledge regarding infection in tuberculosis to guard every source of entrance of the tubercle bacilli into the upper or lower respiratory tract, including direct or indirect contact, with special consideration for the eyes as well as the nasal and oral passages, and thus avoid the inhalation of foam droplets or the aspiration of fluids containing the pathogens from the upper to the lower respiratory tract.

Journal of Experimental Medicine, Baltimore

38: 487-653 (Nov.) 1923

*Survival and Growth of Fibroblasts in Vitro. A. Carrel and A. H. Ebeling, New York.—p. 487.
Action on Fibroblasts of Extracts of Homologous and Heterologous Tissues. A. Carrel and A. H. Ebeling, New York.—p. 499.
*Action of Serum on Lymphocytes in Vitro. A. Carrel and A. H. Ebeling, New York.—p. 513.
Measurement of Inherent Growth Energy of Tissues. A. Carrel, New York.—p. 521.
Blood Cell Formation and Distribution in Relation to Mechanism of Thyroid Accelerated Metamorphosis in Larval Frog. H. E. Jordan and C. C. Speidel, Charlottesville, Va.—p. 529.
*Influence of Suprarenals on Resistance. I. Susceptibility of Suprarenalectomized Rats to Morphin. W. J. M. Scott, Boston.—p. 543.
*Antigenic Properties of Hemoglobin. M. Heidelberger and K. Landsteiner, New York.—p. 561.
*Sensitization of Joints with Nonhemolytic Streptococci. H. F. Swift and R. Boots, New York.—p. 573.
Etiology of Snuffles in Stock Rabbits. Paranasal Sinusitis Factor in Interpretation. J. E. McCartney and P. K. Olitsky, New York.—p. 591.
*Immunity Studies of Rocky Mountain Spotted Fever. II. Prophylactic Inoculation in Animals. H. Noguchi, New York.—p. 605.
*Influence of Factors of Sex, Age and Method of Inoculation on Course of Experimental Syphilis in Rabbit. A. M. Chesney, New York.—p. 627.
*Local Resistance to Spontaneous Mouse Cancer Induced by Roentgen Rays. J. B. Murphy, J. Maisin and E. Sturm, New York.—p. 645.

Survival and Growth of Fibroblasts in Vitro.—Carrel and Ebeling are of the opinion that when multiplying actively in serum fibroblasts are in a condition of survival, not of cultivation, for they do not synthesize protoplasm from substances contained in the medium. They are able to utilize only the nitrogenous material stored in the tissue itself. An active proliferation of fibroblasts taking place during several days in a medium containing a given substances does not mean that this substance is used by the cells, but indicates only that residual cell proliferation is unopposed by a toxic substance. It is not possible to ascertain whether a medium is nutrient or not in the sense that it supports growth unless the mass of the tissues is shown to increase. When the proliferating fragment can be halved again and again, and each half reaches the size of the original whole in forty-eight hours, it is evident that new protoplasm must have been synthesized from the medium. The experiments described by Carrel and Ebeling show that egg white, egg yolk, pure egg albumin, egg white mixed with egg yolk, and bouillon are not utilized by fibroblasts for multiplication. This fact renders more plausible the hypothesis advanced previously that for proliferation the fibroblasts require some nitrogenous substances elaborated by other cells, which are present in embryonic tissue juices.

Action of Serum on Lymphocytes in Vitro.—Experiments made by Carrel and Ebeling have brought to light the fact that lymphocytes are able to live and multiply in a medium containing only blood serum, which does not suffice for the purpose in the case of fibroblasts. The presence, under certain conditions, of lymphocytes and large mononuclear cells in the neighborhood of a culture of fibroblasts in serum markedly increases the activity and the duration of life of the fibroblasts. While living in serum, lymphocytes and large mononuclear cells manufacture and secrete substances which may be used as food material by the fibroblasts. Hence, it is probable that lymphocytes and large mononuclear cells synthesize from the nitrogenous compounds contained in serum the substances which fibroblasts and epithelial cells require for their multiplication.

Susceptibility of Suprarenalectomized Rats to Morphin.—This study was undertaken by Scott to determine the types of reaction of suprarenal-insufficient animals to the harmful effects of a drug. It is intended as an introduction to the investigation of the influence of suprarenal function in bacterial intoxications. One point determined was that the resistance to morphin is greatly diminished in healthy suprarenalectomized rats tested before hypertrophy of the accessories occurs. The greater sensitiveness seems to be due to some fundamental alteration in metabolism dependent on a partial suprarenal insufficiency.

Antigenic Properties of Hemoglobin.—Heidelberger and Landsteiner found that serums produced by immunization with crystalline oxyhemoglobin react species-specifically with hemoglobin solutions. Evidence is presented that in this reaction the hemoglobin itself is the active substance. Conversion of oxyhemoglobin into methemoglobin, carboxyhemoglobin, or cyanhemoglobin does not alter the response to the precipitating immune serum. Not only the hemoglobin of homologous species, but also that of other species, causes inhibition in greater or less degree of the precipitin reaction.

Sensitization of Joints with Nonhemolytic Streptococci.—Swift and Boots report on the results of experiments planned in an attempt to substantiate the hypothesis that the arthritis of acute rheumatic fever is the result of a preliminary specific sensitization of the joints by nonhemolytic streptococci. It was impossible to demonstrate a condition of specific joint sensitization to nonhemolytic streptococci by first injecting the joints of rabbits with small doses of killed nonhemolytic streptococci, or with extracts of these organisms, and subsequently inoculating the rabbits intravenously with homologous living bacteria. Joints so treated were no more liable to involvement than were other untreated joints of the same animals.

Immunity Studies of Rocky Mountain Spotted Fever.—From the findings outlined by Noguchi it appears that the immunizing properties of the Rocky Mountain spotted fever virus are almost, if not totally, removed by heating to 60 C. for twenty minutes or by prolonged preservation at a low temperature. On the other hand, the immunizing power remains fully preserved when the virus is mixed with immune

serum in neutral or superneutral proportions, notwithstanding the fact that such mixtures are completely devoid of infecting power. Moreover, heating of such mixtures to from 56 to 60 C. for twenty minutes, or prolonged preservation at refrigerator temperature, does not altogether destroy, though it markedly reduces, the immunizing power. Since normal rabbit serum does not in any way influence or retard the rapid disappearance of immunizing properties from the virus under similar conditions (heating or aging), the persistence of immunizing power in the neutral or superneutral mixtures appears to be due to a specific reaction which takes place between the virus (antigen) and the immune serum (antibody). For the purpose of inducing artificial immunity in man, the heated neutral mixtures of spotted fever virus and a highly potent immune serum may be used. The ultimate object of these experiments is a method in which the active (unheated) serovaccine may safely be applied to human vaccination.

Factors Influencing Course of Experimental Syphilis.—Rabbits inoculated intradermally with active syphilitic virus, Chesney says, are within specified time limits less prone to develop generalized syphilis recognizable by clinical methods of examination than those inoculated intratesticularly. The effect of removal of the initial focus on the subsequent production of generalized lesions, which in former experiments by Brown and Pearce resulted in a greater incidence of the latter, was not observed by Chesney. In those animals in which the primary reaction was removed by castration, the incidence of generalized lesions was no greater and the time of ocurrence was distinctly postponed. Procedures calculated to suppress the initial lesion (removal, insufficient treatment with arsenicals) resulted in a greater incidence, within certain time limits, of generalized lesions in the animals in which the interference with the initial lesion was instituted than in the controls. On this basis an hypothesis spoken of as a "law of inverse ratio" was formulated. The experiments described by Chesney would seem to indicate that under conditions as yet unknown there may be exceptions to this principle.

Local Resistance to Mouse Cancer Induced by Roentgen Rays.—An attempt has been made by Murphy and his associates to analyze the mechanism by which roentgen rays affect the tumor lying within the skin layers. It is evident from their experiments that, as far as mouse cancer is concerned, the beneficial result from roentgen-ray therapy is due to the reaction in the normal tissues induced by the rays, not to any direct effect on the cancer cells. Autografts from spontaneous cancers of mice, when replanted into areas previously exposed to an erythema dose of roentgen rays, failed to grow in the majority of instances (71.4 per cent.), while similar grafts inoculated into untreated areas grew in a large proportion of the animals (83.6 per cent.). Autografts of spontaneous cancer, established and growing in the skin, disappeared in 76 per cent. of animals after the tumor and surrounding tissues had been exposed to an erythema dose of roentgen rays, whereas other autografts of similar deviation that had been given a like dose of roentgen rays outside of the body and had been implanted in the same animals grew progressively in 96 per cent. of instances. That this result was not due to a greater susceptibility of the cancer cells irradiated in situ was shown by the fact that tumors treated in situ with roentgen rays and then replanted in an unrayed location in the same animal grew actively. Evidently, the roentgen ray had done no direct damage to the cancer cells.

Journal of Parasitology, Urbana, Ill.

10: 1-54 (Sept.) 1923

Founder of American Parasitology, Joseph Leidy. H. B. Ward, Urbana.—p. 1.
Microsporidian Parasites of Ephemerid Nymph. R. Kudo, Urbana.—p. 22.
Transmission Experiments on Specificity of Herpetomonas Muscae-Domesticae in Muscoid Flies. E. R. Becker, Baltimore.—p. 25.
Furcocercous Larval Trematodes. H. M. Miller, Jr., Urbana.—p. 35.
Cysts of Endamoeba Cabayae. F. O. Holes, Baltimore.—p. 47.
New Cetacean Cestode (Prosthecocotyle monticellii sp. nov.); note on Genus Tetrabothrius Rudolphi. E. Linton, Augusta, Ga.—p. 51.

Journal of Urology, Baltimore

10: 335-413 (Nov.) 1923

*Surgical Pathology of Acute and Chronic Epididymitis. H. L. Kretschmer, Chicago, and J. C. Alexander, Houston, Texas.—p. 335.
Surgical Pathology of Seminal Vesicles. J. R. Dillon and F. E. Blaisdell, San Francisco.—p. 353.
Concentrating Cells and Bacteria in Prostatic Secretion. H. W. E. Walther, New Orleans.—p. 367.
*Causative Organisms and Effect of Autogenous Vaccines in Chronic Prostatitis. L. P. Player, R. K. Lee-Brown and C. P. Mathe.—p. 377.
Seminal Vesiculitis After Prostatectomy Due to Infection with M. Catarrhalis. M. L. Boyd, Atlanta, Ga.—p. 387.
*Effects of Injecting Collargol into Vas Deferens. J. Brams, Chicago.—p. 393.
*Microscopic Examination of Semen to Determine Presence of Seminal Vesiculitis. E. G. Ballenger and O. F. Elder, Atlanta.—p. 405.
*Rejuvenation Experiments with Vas Ligation in Rats. D. I. Macht and E. J. Teagarden, Jr., Baltimore.—p. 407.

Surgical Pathology of Epididymitis.—In the series of thirty-seven cases of both acute and chronic epididymitis, reported by Kretschmer and Alexander, the disease was bilateral in three instances, making a total of forty epididymes which were available for histologic study. There were twenty-six cases of acute epididymitis. Of this number, two cases (one bilateral), as far as could be determined, were of nonvenereal origin. One patient suffered with chronic retention of urine due to tabes dorsalis, necessitating daily catheterization. In the other patient, the epididymitis apparently was traumatic in origin. There were twenty-four cases of acute gonorrheal epididymitis. Scrotal changes, varying only in degree, were present in nearly all the cases. Not infrequently the scrotum was adherent to the epididymis so that the latter was visible on inspection (periepididymitis?). At other times the involvement of the scrotum and epididymis was evident only on palpation. Hydrocele fluid was present in twenty-one cases. A fibrinous exudate was noted eighteen times. The epididymis was involved to a variable degree. There were eleven cases of chronic epididymitis. Nine were of nongonorrheal origin. The following associated lesions of the urinary tract were noted: chronic pyelitis and cystitis, four cases, and one case each of chronic cystitis following prostatectomy; carcinoma of the prostate; chronic prostatitis and chronic seminal vesiculitis. The microscopic changes in all these cases are described.

Gonococci Not Found in Prostatitis; Effect of Vaccines.—In cases of long standing chronic prostatitis, the gonococcus was never recovered by Player et al. from the prostatic secretion, although culture methods employed were extremely favorable to its growth. Autogenous vaccine failed to produce any marked permanent effect on the course of a chronic prostatitis.

Effect of Injecting Collargol Into Vas Deferens.—The injection of 5 per cent. collargol into the vas deferens, as carried out by Brams, caused an intense acute inflammatory reaction which resulted in destruction of the epithelial cells lining the lumen, edema of the mucosa and muscularis, and a dense round cell infiltration into these layers. At the site of the injection the effect of the trauma, in addition to that of the collargol, resulted in an exudation of fibrin on the serosa which organized and became adherent to the surrounding structures. Brams suggests that this may result in permanent kinks or twists of the vas which can cause partial occlusion of the lumen. At the point of injection there is proliferation of fibroblasts at the site of the lumen which results in complete obliteration due to stricture formation within two weeks after injection.

Test for Seminal Vesiculitis.—There is a test for determining whether a patient has seminal vesiculitis which Ballenger and Elder think is not sufficiently employed, namely, the examination of a condom specimen of the semen for pus. In this manner chronic seminal vesiculitis can be differentiated from chronic prostatitis.

Rejuvenation Experiments with Vas Ligation.—The effect of ligation of the vas deferens in senile rats was studied by Macht and Teagarden on behavior in the circular maze, muscular coordination, weight and general appearance. No change was produced in the behavior of rats in the circular maze. A definite improvement in the muscular coordination, muscular efficiency and general appearance of the rats was

noted but it was of a transient nature. The authors believe, however, that the results of their experiments warrant further investigation of the subject.

Minnesota Medicine, St. Paul

6: 611-676 (Nov.) 1923

Functions of State Medical Association. E. S. Judd, Rochester.—p. 611.
*Treatment of Tuberculosis. H. L. Taylor, St. Paul.—p. 616.
*Comparative Values of Mouth and Rectal Temperatures. J. H. Bendes, F. L. Jennings and H. S. Boquist, Minneapolis.—p. 622.
Management of Acute Brain Injuries. O. N. Meland, Warren.—p. 625.
Gibson Rubber Dam Tampon in Acute Appendicitis. R. C. Webb and L. E. MacFarlane, Minneapolis.—p. 632.
Feeblemindedness. D. E. McBroom, Faribault.—p. 636.
*Strophanthus Kombé. R. E. Morris, St. Paul.—p. 643.
Radiation Therapy and Its Indications in Treatment of Certain Benign and Malignant Conditions. F. S. Bissell, Minneapolis.—p. 646.
Tonsils. O. W. Rowe, Duluth.—p. 652.

Tuberculin in Treatment of Tuberculosis.—Taylor has used tuberculin for thirty years, and is convinced that it is exceedingly useful in assisting fibrosis and maintaining a high degree of immunity for many years, if used after all acute symptoms have been controlled. Given to children with positive Pirquet reaction, this result is especially marked. Taylor also discusses heliotherapy, artificial pneumothorax and surgical measures for the treatment of empyema.

Comparative Value of Mouth and Rectal Temperatures.—Bendes and his associates found that the rectal range of temperature is more constant than the mouth range and the variations are not so marked. From the standpoint of the sources of error, rectal readings are more reliable. With the thermometer in the mouth, the patients do not keep the lips compressed firmly on the thermometer for a period of five minutes, and five minutes in a great many cases is insufficient time. The acts of coughing and sneezing and laughing are detrimental in mouth temperature. The element of cooperation of patients is not constant. These conditions are eliminated by rectal readings. The accepted standard of 1 degree of variation between rectal and mouth temperature is said not to be held true because in a series of thousands of readings, the authors found that 0.4 degree was the most prominent variation in both children and adults.

Strophanthus Kombé.—Morris urges that to secure strophanthus results, *Strophanthus kombé*, manufactured by a reliable firm, should be used. Smaller doses produce better results than doses bordering on the toxic side.

Rhode Island Medical Journal, Providence

6: 163-178 (Nov.) 1923

Modern Italian Surgery. J. W. Keefe, Providence.—p. 163.
Influenzal Gastroduodenitis with Jaundice. A. M. Burgess, Providence.—p. 166.

Virginia Medical Monthly, Richmond

51: 503-578 (Nov.) 1923

Analysis of Coué's Method, and Its Fallacies. J. A. Hodges, Richmond.—p. 511.
Medical and Surgical Impressions of South America. P. W. Boyd, Winchester.—p. 514.
Family Physician in Public Health Program. M. E. Brydon, Richmond.—p. 520.
Insulin in Diabetes Mellitus. A. G. Brown, Jr., Richmond.—p. 524.
Ocular Complications of Nasal Sinus Diseases. W. E. Lambert, New York.—p. 532.
Psychology in Medicine. G. Stragnell, New York.—p. 538.
*Radium Treatment of Chronic Myelogenous Leukemia. Report of Five Cases. I. A. Bigger, Jr., Charlottesville.—p. 543.
*Eye Inflammations Caused or Influenced by Dental Sepsis. Report of Cases. C. P. Jones, Newport News.—p. 547.
*Aspiration of Cephalematoma of New-Born. B. Lankford, Norfolk.—p. 549.
Roentgenologist and Referring Physician: Their Relations. J. E. Harris, Winchester.—p. 550.
Focal Infection from Specialist's Viewpoint. D. L. Rawls, Suffolk.—p. 553.

Radium Treatment of Chronic Myelogenous Leukemia.—Bigger reports satisfactory temporary remissions in five cases of chronic myelogenous leukemia treated with radium. In one case an acute leukemia developed, and there was a lethal exodus. Radium seems to have no effect on the acute leukemias. Surface applications over the spleen with moderate dosage seem the safest and most efficient plan of treatment.

Eye Inflammations Caused by Dental Sepsis.—Jones reports thirteen cases in which tooth infection was definitely proved to be the cause of the eye condition. The diseases were: iritis, uveitis, corneal ulcers, glaucoma, episcleritis, opacities of the vitreous with mental symptoms, migraine and orbital neuralgia.

Aspiration of Cephalematoma of New-Born.—Textbooks say that cephalematoma requires no treatment unless suppuration ensues. Lankford does not believe this to be good advice. When the swelling has ceased to increase, it seems to him that the proper treatment should be aspiration. He has had three cases.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Surgery, Bristol

11: 197-404 (Oct.) 1923

Pott's Puffy Tumor. Eponyms. X. D. Power.—p. 197.
Primary Carcinoma of Lung. K. Playfair and C. P. G. Wakeley.—p. 203.
Rhabdomyoma of Uvula: Report of Cases. C. Nicory.—p. 218
*Pathology of Neoplasms of Testis. A. H. Southam and E. A. Linell.—p. 223.
Arthroplasty. E. W. H. Groves.—p. 234.
*Anomalies of Intestinal Rotation: Report of Five Cases. N. M. Dott.—p. 251.
*Case of Secondary Hypernephroma in Femur with Spontaneous Fracture. L. R. Broster.—p. 287.
*Paget's Disease of Nipple. G. L. Cheatle.—p. 295.
Arthroplasty. A. H. Todd.—p. 319.
Some Results of Nerve Anastomosis. C. Ballance.—p. 327.
*Leontiasis Ossea. R. L. Knaggs.—p. 347.
Two Cases of Acute Intestinal Obstruction Due to Impaction of Gallstones. C. P. G. Wakeley.—p. 380.
*Case of Intestinal Obstruction in New-Born Infant, Associated with Unusual Malformation of Small Intestine. T. T. Higgins.—p. 382.
Sacculitis of Jejunum Associated with Acute Intestinal Obstruction Due to Embolus in Intestinal Branch of Superior Mesenteric Artery. A. Pinniger, C. E. L. Burman and C. F. M. Saint.—p. 384.
Fracture of Head or Separation of Epiphysis of Femur. J. J. Levin.—p. 388.

Pathology of Tumors of Testis.—Malignant disease of the testis is comparatively rare, and, according to Southam and Linell, occurs about once in 1,500 surgical male admissions to hospital. In forty-five collected cases, seven occurred in the imperfectly descended testis. Trauma appears to precede the appearance of malignant changes in certain cases. The commonest malignant tumor of the testis arises in germinal epithelium, and is usefully and accurately described as a spermatocytoma. Sarcoma is an extremely rare tumor of the testis, most of the growths so-called being definitely epithelial in type and more correctly classified with the spermatocytomata. True carcinoma of a spheroidal cell form is frequently found in the testis. It probably arises from a malignant metaplasia of the epiblastic or hypoblastic cell elements of a teratoma. The age-incidence of carcinoma is 26.3 years, that of spermatocytoma 42.6 years. Teratoma, although histologically innocent, may form metastases, and is extremely liable to malignant change. All tumors of the testis must be considered as potentially malignant growths, and require operative removal as such.

Anomalies of Intestinal Rotation.—The three stages of normal embryonic intestinal rotation are described by Dott and three cases of volvulus due to anomalies of intestinal rotation are reported: reversed rotation and volvulus of the ileocecal segment in an old man; nonrotation and volvulus of the entire midgut segment in a new-born child; malrotation and volvulus of the entire small intestine in a new-born child. An operative treatment of reduction and fixation is suggested for cases of extensive volvulus in the new-born, based on an examination of two specimens of the condition. Dott also reports a case of complete exomphalos and lateral equinovarus in which death occurred, and a case of partial exomphalos without associated deformities in which operation was followed by recovery.

Secondary Hypernephroma in Femur.—The interesting point of Broster's case is the length of time—nearly ten years—before the appearance of a bony metastasis after the removal of the kidney, the longest time quoted in the literature being

ten years. Broster concludes that the dissemination of secondary hypernephroma in bone takes place via the blood stream, and the evidence is based on the detection of tumor cells within the lumen of the blood vessels, and also on the absence of any infiltration of the lymphatic channels, especially those in the periosteum above the tumor.

Paget's Disease of Nipple.—Cheatle believes that Paget's disease of the nipple is carcinoma. Carcinoma in the breast, with which Paget's disease of the nipple is usually associated, is a primary carcinoma of the breast epithelium. The connection between these two is that the agent of irritation which is inducing Paget's disease is also concerned in inducing primary carcinoma in the epithelial cells of the underlying breast, which is reached by means of the mammary ducts.

Leontiasis Ossea.—The periostitic form of leontiasis ossea, Knaggs asserts, is in all probability the result of micro-organismal infection. The osteitic form is almost certainly caused by toxins.

Intestinal Obstruction in New-Born.—The nature of the obstruction in Higgin's case would appear to have been as follows: The ileocolic segment of the intestine having become fixed in the upper abdomen, possibly by internal herniation, the lower pillar of the mesenteric bridge was dragged on so as to produce an obstruction of the jejunum at the point where it passed beneath the "bridge." Release of the ileocolic segment relieved the obstruction. The complete and lengthy mesentery possessed by the ascending colon permitted a wide excursion.

British Medical Journal, London

2: 955-1012 (Nov. 24) 1923

Pathology of Gastric Ulcer. M. J. Stewart.—p. 1012.
Angina Pectoris. J. Hay.—p. 957.
Injury to Spleen: Delayed Hemorrhage. C. R. Taylor and C. F. G. Taylor.—p. 962.
Nervous Child. H. C. Cameron.—p. 963.
*Relation of Syphilis to Obstetrics. C. S. L. Roberts.—p. 971.
*Roentgenographic Pelvimetry. W. R. MacKenzie.—p. 975.
Deformities of Syphilitic Nose. H. D. Gillies.—p. 977.
Organotherapy in Diseases of Ear, Nose and Throat. W. J. Leighton.—p. 979.
Correction of Nasal Deformities. J. E. Sheehan.—p. 981.
Pansinusitis and Septic Thyroiditis. A. Anderson.—p. 982.
Facial Paralysis Following Herpes Facialis. M. Lawrence.—p. 982.

Syphilis and Obstetrics.—Roberts is of the opinion that if the antenatal clinic, the infant welfare center, the children's clinic, and the venereal clinic work in cooperation, one can hope to see the passing of congenital syphilis.

Roentgenographic Pelvimetry.—MacKenzie urges the routine use of this method because of its accuracy in showing to advantage the variety of pelvic contraction, and the ease with which the various pelvic diameters can be worked out, with a minimum amount of discomfort to the patient. It is a valuable means of conserving maternal and fetal life.

China Medical Journal, Shanghai

37: 797-886 (Oct.) 1923

Kala-Azar in China. C. W. Young.—p. 797.
*Blood Pressure of Normal Cantonese Students. W. W. Cadbury.—p. 823.
Deficiency of Breast-Milk in Nursing Mothers: Treatment. E. Smyly.—p. 834.
Some Valuable Aids in Ocular Therapeutics. R. A. Peterson.—p. 842.
Treatment of Schistosomiasis Japonica. E. C. Faust.—p. 847.
Simple Form of Carrel-Dakin Electrolytic Cell. B. R. Stephenson.—p. 850.

Blood Pressure of Normal Chinese.—It appears from Cadbury's study that the systolic blood pressure of Cantonese and other Chinese young men belonging to the south of China averages from 20 mm. to 30 mm. less than the normal for people of Europe and North America. The diastolic pressure of the Chinese is also lower than the generally accepted normal, but only from 10 mm. to 20 mm. The average pulse pressure shows little variation from the generally accepted normal, and is, therefore, relatively high. There is a regular arithmetical increase of systolic and diastolic pressure values from 7 to 22 years of age. A less regular increase is observed in the pulse pressure. It is a remarkable fact that hypertension as a pathologic condition in Chinese is very unusual. In more than twelve years in Canton, Cadbury rarely met with hypertension, either with or without signs of nephritis, although chronic Bright's disease is very common. When met with, marked hypertension has generally been associated with aortic valvular disease of the heart. Cadbury infers that small stature and lighter weight, diet and climate have a bearing on blood pressure.

Glasgow Medical Journal

100: 209-279 (Nov.) 1923

Management of Medical Research. R. Ross.—p. 209.
Clinical Manifestations of Cerebral Tumors. G. M. Holmes.—p. 224.
Molière and Doctors. J. G. Andrew.—p. 247.

Indian Medical Gazette, Calcutta

58: 453-504 (Oct.) 1923

*Carbon Tetrachlorid in Pharmacology and Therapeutics. R. N. Chopra and J. B. McVail.—p. 453.
Complications Following 1,322 Consecutive Cases of Cataract Extraction. M. M. Cruickshank.—p. 461.
Radium Treatment of New Growths Without Direct Application of Radium. J. C. Vaughan.—p. 467.
Frambesia. R. Knowles, R. N. Chopra, J. C. Gupta and B. M. Das Gupta.—p. 470.
*Hookworm Infestation in Coal Mines of Bengal. J. W. Tomb.—p. 473.
Malaria Investigation on Sugar Estate in Kamrup, Assam. B. S. Chalam and T. C. McCombie Young.—p. 476.
*New Treatment for Naga Sore. R. B. Abraham.—p. 479.

Pharmacology of Carbon Tetrachlorid.—The pharmacologic action and toxicity of carbon tetrachlorid was worked out by Chopra and McVail. They found that the drug is a general protoplasmic poison. A 1:3,000 solution killed *Paramecium caudatum* instantaneously, but the toxicity of the drug to the intestinal protozoa is low. Applied to the skin it produces a feeling of burning, and when rubbed into it is a rubefacient and irritant. In the intestine it causes a distinct increase of peristaltic movements. The stimulant effects produced on the movements of such organs as the stomach and intestine are purely reflex, being produced by the irritant action on the mucous membrane of these viscera. There is also a reflex rise of blood pressure, followed by a fall if the irritation is excessive. On muscle tissue the drug has a decidedly depressant action. The absorption of the drug from the stomach and intestine is still under investigation. Inhalation of the vapor or actual contact of the liquid drug with the mucous membrane of the respiratory passage has a marked irritant effect. If the quantity of the drug gaining access to the larynx and trachea is at all large, the animal dies. The irritant effect of carbon tetrachlorid on the mucous membrane of the respiratory tract is much stronger than that of chloroform or of carbon disulphid. One cubic centimeter of carbon tetrachlorid (1.6 gm.) introduced into the tube leading from the anesthetic bottle to the tracheal cannula produced symptoms of collapse. The authors conclude that the collapse produced is a reflex phenomenon, due to irritation of the sensory nerves of the larynx and trachea, and that possibly the vagi are the chief nerves concerned. Intravenous injections of 5 c.c. of a saturated solution in physiologic solution of sodium chlorid produced little or no effect on the respiration. Larger doses produced marked depression and irregularity of the heart and respiration. On the circulation and inhalation of the drug had a depressant action. Perfusion of an isolated heart with 1 part of carbon tetrachlorid in 12,000 of saline caused depression. Doses of 0.5 to 2 c.c. per kilogram produced no marked change in healthy livers and kidneys. On the uterus, carbon tetrachlorid in therapeutic doses has little effect. The effect on the central nervous system is slight and shows transient preliminary stimulation, followed by depression. The pure drug introduced into the digestive tract even in large quantities is astonishingly safe. On the living segments of the tapeworm and *Ascaris lumbricoides* the drug has little effect, but it is the most efficient anthelmintic known for hookworm. The toxic dose of from 1 to 4 c.c. per kilogram of body weight is far in excess of the therapeutic total dose of 0.13 c.c. per kilogram. When given in medicinal doses and with a purge to persons organically sound it is safe, provided that the drug is pure and that it is swallowed and does not enter the larynx. The great contraindication is a liver with impaired function such as is caused by alcoholism, chronic or acute.

Hookworm Infestation without Symptoms.—Tomb says that hookworm infection is found among the majority (70 per cent.) of the workers in the coal mines of Bengal without any apparent symptoms.

Antimony Tartrate in Naga Sore.—Naga sore is the name given to a very malignant and chronic form of ulcer which is met with by medical officers of tea gardens in Assam. The definite bacteriology of these ulcers is not complete. For the past two years Abraham has been using a solution of chlorinated lime with satisfactory results. The first few dressings are applied hot. This readily cleans the ulcer and healing rapidly takes place. Intravenous injection of a 2 per cent. solution of antimony tartrate, beginning with a 0.5 c.c. every other day, has led to prompt healing of the ulcer with local application even of plain water.

Irish Journal of Medical Science, Dublin

339-378 (Nov.) 1923

Modern Developments of Medicine. G. E. Nesbitt.—p. 349.
Biology of Schizomycetes. W. M. Crofton.—p. 371.

Journal of Tropical Medicine and Hygiene, London

26: 325-336 (Nov. 1) 1923

*Plague in Bagdad. T. B. Heggs.—p. 325.

Plague in Bagdad.—Bubonic plague is endemic in Bagdad, according to Heggs' observation. In the interepidemic periods plague infected rats are continuously found though in small numbers. Climatic conditions determine the onset and cessation of the disease in epidemic form. The protection of the population by antiplague vaccine is definite and almost complete. There is evidence that some protection may last longer even than one year. The best method of treatment in Heggs' opinion is by the antiplague serum (Pasteur). Large doses by the intravenous route in the toxic cases are required to be given as soon as possible. Doses of less than 40 c.c. are useless. An 100 c.c. dose, intravenously, is required in very toxic cases. An initial large dose gives better results than a moderate dose repeated. The myocarditis of plague toxemia is severe and dangerous and must always be considered.

26: 337-348 (Nov. 15) 1923

*Jaundice of Bacterial Origin. L. Anigstein and Z. Milinska.—p. 337.

Jaundice Due to Bacillus Aertrycke.—From sixty-seven serums of so-called catarrhal jaundice cases, Anigestein and Milinska obtained fifty-six times a positive agglutination with the strain *B. aertrycke* Stanley. From the blood (or urine) of severe jaundice cases they cultivated two strains of bacilli with biochemical properties corresponding to *B. paratyphoid* B and one strain which is biochemically typhoid. Serologically these strains were idential with Witts (Andrewes) *B. paratyphoid* C and *B. aertrycke* Stanley and typhoid. The authors assert that paratyphoid bacilli belonging to different serologic types (autogenic mosaic) play a part in the etiology of the majority of the examined "catarrhal jaundice."

Lancet, London

2: 1067-1118 (Nov. 17) 1923

Commercial Influences in Therapeutics. A. J. Clark.—p. 1067.
Principles of Symptomatology. J. Mackenzie.—p. 1069.
Typhus Problem in South Africa. H. F. Sheldon.—p. 1075.
*Immunizing Function of Subepithelial Lymph Glands. K. H. Digby.—p. 1077.
Four Cases of Mastoid Disease. T. G. D. Bonar.—p. 1079.
Case of Anaphylactic Shock Due to Alimentary Absorption of Milk. J. M. Clearkin.—p. 1080.

Immunizing Function of Subepithelial Lymph Glands.—In a series of papers published from 1911 to 1917, Digby suggested that the tonsils, Peyer's patches, solitary lymph glands, and the vermiform appendix should be grouped together as the subepithelial lymph glands; that they were continually ingesting the adjacent bacteria in the nasal and alimentary channels by a process to which he gave the name phagotaxis; and that in all probability by this mechanism these subepithelial lymph glands were constantly immunizing the body against various infections. Digby now urges the probability of an immunizing function for the tonsils and appendix, and in view of such probability to press for closer examination of some of the indications for operation.

2: 1119-1170 (Nov. 24) 1923

*Prognosis in Angina Pectoris. J. Hay.—p. 1119.
Treatment of Diabetes Mellitus with Insulin. O. Leyton.—p. 1125.
*Pathogenesis of Cerebral Diplegia. J. Collier.—p. 1129.
*Elephantiasis Scroti. H. W. L. Waller.—p. 1132.
Albuminuria of Pregnancy. F. Cook.—p. 1133.
Death Following Injection of Diphtheria Antitoxin and Due to Status Lymphaticus. D. MacIntyre and D. W. McKay.—p. 1133.
*Uncommon Case of Typhoid Fever. R. Swyer.—p. 1134.

Prognosis in Angina Pectoris.—Hay has reviewed the records of 309 patients in whom the dominant feature was pain of an anginal type in an attempt to formulate the results of his personal experience; especially with the view to arriving at some basis for prognosticating the outcome. He believes that the expectation of life in these patients can be predicted with some degree of justifiable confidence. The outlook depends on the integrity of the myocardium, and the health of the general arterial tree. It will depend also on the degree of cooperation given by the patient. Whatever indicates a tendency to cardiac failure is of significance. It is significant that the first symptom of angina can often be related to some sharp illness, involving a pyrexia of possibly only a few days duration. Such a history, if recent, indicates caution in offering an opinion as to the prognosis, until sufficient time has been allowed for the myocardium to recover. One indication of an impaired myocardium is dyspnea. Another sign of value is the pulsus alternans, the ominous significance of which is not sufficiently appreciated. It is usually accompanied by other indications of cardiac distress—such as an increasing breathlessness, attacks of nocturnal dyspnea, or even of periodic breathing. In any anginal patient it is a manifestation of distress, and probably has for a pathologic basis fibrosis of the myocardium. One of the commonest abnormal conditions associated with angina pectoris is a raised blood pressure. In 300 patients, 108 had a systolic blood pressure of 180 mm. and over. The significance of hypertension, apart from the possibility of associated kidney disease, lies in the fact that a raised blood pressure adds to the load which the heart carries, and in addition is generally associated with a diffuse arteriosclerosis; so that this type of patient is predisposed to cardiac distress and cerebral accidents. If it be found possible to modify even slightly an excessive blood pressure, the symptoms are ameliorated but the expectation of life is not appreciably increased. The electrocardiograph may also aid in prognosis by showing the state of the myocardium. The mortality in angina pectoris varies with the health of the myocardium.

Pathogenesis of Cerebral Diplegia.—Collier submits the view that the essential anatomic cause of diplegia is a primary neuronic degeneration due to factors which are at present entirely elusive, with the exception of rare cases in which syphilitic infection of the brain is certainly the provoking agent. This conception of the pathogenesis is said to be compatible with all the pathologic evidence which has been recorded, and to best explain the symptomatology and clinical aspect of this class of diseases.

Operation for Elephantiasis of Scrotum.—Waller describes an operation which is a modification and simplification of that described by Fauntleroy. He uses a screw-clamp at the base of the tumor as a tourniquet and makes a horseshoe flap containing the penis, raises up the testes and cuts away all redundant tissue.

Unusual Symptoms in Typhoid.—Pain in the occipital region was the only symptom complained of by Swyer's patient during the whole illness. The blood serum agglutinated a stock culture of *Bacillus typhosus* up to a dilution of 1:160 and a bacillus previously isolated from the patient's own blood up to 1:80. *Bacillus typhosus* was also recovered from the feces. At no time was the rash of typhoid fever present. The spleen was not enlarged and there were no intestinal symptoms. The only time the patient had been in contact with typhoid fever six weeks previous to her illness was two days before the onset of symptoms. She recovered.

Medical Journal of Australia, Sydney

2: 401-426 (Oct. 20) 1923

Blood Grouping. F. J. Clark.—p. 401.
Some Problems in Hookworm Disease at State Orphanage, Townsville. R. W. Cilento.—p. 403.

Lipase in Urine in Two Cases of Acute Pancreatitis with Fat Necrosis. G. Cameron.—p. 408.
*Popular Fallacy. J. G. Edwards.—p. 411.
Puerperal Infection: Spontaneous Fecal Fistula. A. J. Nyulasy.—p. 411.
Gastric Spasm. A. J. Nyulasy.—p. 412.
Pagetoid or Erythematoid Basal Cell Epithelioma. N. Paul.—p. 412.

2: 427-454 (Oct. 27) 1923

Blood Transfusion in Civil Practice. A. W. Holmes A. Court.—p. 427.
Mental Defiiency Among Criminal Insane. S. J. Minogue.—p. 438.
Diaphragmatic Hernia. T. W. Lipscomb.—p. 440.

Diamonds Are Not Discernible by Roentgen Rays.—For many years lay and semiscientific journals have made the statement that natives working in the South African diamond mines are examined by the roentgen ray to see whether they have purloined diamonds by swallowing them. Edwards asserts that this is not true because a diamond throws virtually no shadow on the photographic plate, and it is almost impossible to detect one when placed on a plate with a small hand covering it.

Medical Journal of South Africa, Johannesburg

14: 67-98 (Oct.) 1923

Acute Diarrhea of Infants. B. G. Melle.—p. 68.
Complications. F. S. D. Herry.—p. 72.
Bacteriology of Acute Diarrhea of Infants. J. Pratt-Johnson.—p. 72.
Therapeutic Treatment by Small Doses of Roentgen Rays. L. E. Ellis.—p. 75.
Review of Recent Work on Blood Sugar and Diabetes. II. A. D. Stammers.—p. 77.

Quarterly Journal of Medicine, Oxford

1-111 (Oct.) 1923

*Paraplegia and Cauda Equina Symptoms in Lymphogranulomatosis Maligna (Hodgkin's Disease). F. P. Weber.—p. 1.
*Erythedema Polyneuritis. So-Called "Pink Disease." D. Paterson and J. G. Greenfield.—p. 6.
*Reaction to Epinephrin in Man. D. M. Lyon.—p. 19.
*Levulose Test for Liver Efficiency. Investigation of Hepatic Condition in Pregnancy. K. H. Tallerman.—p. 37.
*Visceral Pain in Upper Alimentary Tract. W. W. Payne and E. P. Poulton.—p. 53.
*Liver Atrophy. J. Miller and A. Rutherford.—p. 81.
Generalized Myositis Fibrosa. Report of Case. J. A. G. Burton, J. Cowan and H. Miller.—p. 103.

Paraplegia in Malignant Lymphomatosis.—In advanced cases of undoubted lymphogranulomatosis maligna, paraplegia or cauda equina symptoms sometimes arise. In two cases cited by Weber this complication was found to be due to lymphogranulomatous growth within the vertebral canal causing compression. In one of these cases the lymphogranulomatous growth found between the spinal dura mater and the bony wall of the vertebral canal was exactly analogous to the lymphogranulomatous periosteal growth found in the same case outside the bodies of certain vertebrae. Both the periosteum on the outside of the vertebrae and the loose connective and fatty tissue (epidural) between the dura mater and bone contain lymphatic elements, in which lymphogranulomatous growth occasionally develops in the cases of lymphogranulomatosis maligna.

Erythredema Polyneuritis.—Five cases are discussed by Paterson and Greenfield. Two of these came to necropsy and a report of the findings is given.

Reaction to Epinephrin.—The response to a subcutaneous dose of epinephrin was studied by Lyon. Local and general phenomena followed the injection. The general reaction included the production of certain cardiovascular and metabolic changes—palpitation, blood pressure rise, and augmented blood flow, together with increase in pulmonary ventilation, oxygen consumption and carbon dioxid output, etc. These changes progressed nearly synchronously. The characters of the reaction differed considerably in different persons. The responses were slight, moderate, or marked in degree, rapid or slow in onset, short lived, or persistent in duration. The type of reaction depends to a great extent on the rate of absorption of the drug and also on the "sensitiveness" of the patient. The changes in diastolic blood pressure, pulse rate and blood sugar concentration did not conform to the general type and are specially discussed. When the cases are examined from the point of view of the disease present, the changes found are not specially characteristic. Untreated hypothyroid cases show poor reactions, hyperthyroid subjects show marked reactions, and in diabetics the character of the response is influenced by the nature of the diet during the preceding days.

Levulose Test for Liver Efficiency.—Tallerman regards the levulose test for hepatic functions as most useful, but finds the normal variations greater than has hitherto been stated. A blood sugar value of from 0.12 to 0.13 per cent. after a dose of levulose is not in itself evidence of a pathologic condition. If, however, the height of the curve exceeds 0.135 per cent. and the actual rise in value from the original level exceeds 30 mg., a degree of liver inadequacy is presumed. The prolongation of the curve, a high blood sugar value persisting at the end of from one and one-half to two hours, is strong evidence of such disorder. Dosage according to weight appears to be a questionable factor in the test; 45 gm. of levulose seems to be satisfactory as a routine dose. A procedure for estimating small quantities of sugar in the urine by means of safranin, with the aid of narrow tubes, is described. There is no evidence that the liver is in any way affected in normal pregnancy. The renal threshold for levulose in this condition is, however, practically nonexistent. Some evidence was obtained pointing to a disturbance of liver function in certain cases of eclampsia.

Nature of Esophageal Pain.—The pressure produced by peristaltic waves in the human esophagus and their rate of progression have been measured by Payne and Poulton. There is evidence that an esophageal peristaltic wave ends by causing the cardia to contract, and the cardia descends and probably invaginates itself into the stomach during the process. The "gastro-esophageal antiregurgitation reflex" has been substantiated in man. Esophageal pain, or "heartburn," which is felt beneath the sternum or in the epigastric angle, is associated with peristaltic movements of the esophagus, and often with a rise in the mean pressure. Anginal pain was in one case not associated with esophageal movements, and in another case the pain was abolished after sucking air into the stomach. This is contrary to Verdon's hypothesis. The pressure in the stomach, when functioning normally, measures at the level of the liquid between 5 and 11 cm. of water. In gastroptosis the pressure in the upper part of the stomach is higher than in the lower part, and in one case the difference was abolished on wearing a belt. Pain felt in the upper abdomen may be associated with movements in the pyloric part of the stomach, in the duodenum, or in the jejunum (subsequent to gastrojejunostomy). There is evidence that these parts may be affected alone or simultaneously, and there may, or may not, be simultaneous movements in the esophagus, causing heartburn. Some evidence is given that visceral pain may be produced during relaxation of the muscular walls of the viscus. Pressures of more than 30 cm. of water may be registered in the stomach just before eructation.

Etiology of Liver Atrophy.—Sixteen cases are analyzed by Miller and Rutherford. There was postmortem evidence of a history of tuberculosis in ten cases. Definite evidence of syphilis was obtained in two acute cases. In two others there were points in the history which suggested the possibility of syphilis. There was the possibility of a paratyphoid infection in one case. In another case there was a history of typhoid many years previously. A history of scarlet fever was obtained in two cases and in another case it was a terminal complication. In one case there had been three attacks of chorea within the previous two years. Amebic dysentery was present in one acute case. In every case a history of some infective disease was obtained, except when for some reason or other a history could not be secured. There was no histologic evidence in the cases examined to indicate that the condition arises by the direct spread of an infective process along the bile ducts to the intestine.

South African Medical Record, Cape Town

21: 485-508 (Nov. 10) 1923

Syphilitic Affections of Mouth. H. Gluckman.—p. 486.
Observations on 28 Years' Medical Practice in African Native Territory. N. M. Macfarlane.—p. 492.
Simultaneous Dislocation of Elbow and Shoulder. P. Jabkovitz.—p. 496.

Annales de l'Institut Pasteur, Paris

37: 879-920 (Oct.) 1923

*The Protozoa of Plants. G. Franchini.—p. 879.
*The "Neurotropic Virus" of Syphilis and Spirochaeta Cuniculi. A. Klarenbeeck.—p. 886.
Natural Ferromanganese as a Catalytic Fertilizer. C. Picado and E. Vicente.—p. 891.
*Vaccination by the Mouth. A. Calmette.—p. 900.

The Protozoa of Plants.—Franchini relates that his discovery of amebas and trypanosomes in the sap of the euphorbia has been confirmed by others, not only in the tropics but also in France and Switzerland. Healthy plants have been infected with latex from plants affected with the parasites, and he has succeeded in infecting plants with certain protozoa from man and animals.

Experimental Syphilis.—Klarenbeek analyzes the points which differentiate syphilis in rabbits caused by injection of tissue from cases of neurosyphilis from the spontaneous disease in rabbits due to *Spirochaeta cuniculi.* The immunity conferred by the latter is not certain nor lasting, so that crossed immunity studies are not possible.

Vaccination by the Mouth.—Calmette warns that the evidence to date is far from conclusive as to any possible efficacy of bacterial vaccines administered by the digestive tract. In animals, vaccines by the mouth displayed no efficacy unless given repeatedly and in amounts approximating the toxic dose. He reviews the evidence to date on the subject from different countries, citing Besredka's experience (summarized in THE JOURNAL, Feb. 3, 1923, p. 360).

Archives Franco-Belges de Chirurgie, Brussels

26: 807-902 (Sept.) 1923

*Cavity-Forming Gliomas in Brain. P. Martin.—p. 807.
Inflammatory Process in Cauda Equina. L. Poussepp.—p. 848.
Cystic Tumors in Nerves. J. Moreau and L. van Bogaert.—p. 864.
Case of Macrodactylia. M. van Neck.—p. 895.
Priority of Measures to Stabilize Blood for Transfusion. R. Lewisohn.—p. 899. Idem. Hustin.—p. 901.

Surgical Treatment of Cystic Glioma in the Brain.—This communication from Harvey Cushing's service reports five cases in detail out of a total of ninety-five cases of cavity-forming gliomas in the brain. The average survival of 78 was thirty-two months, but 32 per cent. survived for three years; 23 per cent. for five, and 6.7 per cent. for ten years or more after evacuation of the cyst and treatment of its walls.

Clinique, Paris

18: 257-284 (Oct.) 1923

*Constipation an Artificial Symptom. G. Leven.—p. 260.
Transfusion of Pure Blood. A. Bécart.—p. 265.
Brandt Technic for Gynecologic Exploration. H. Sosnowska.—p. 274.
Psychiatric Examination by Practitioner. L. Livet.—p. 277.
Tonsillectomy. A. Churchill.—p. 279.

Artificial Symptoms.—Leven applies this term to clinical manifestations for which the disease is not responsible; for instance, the coma in typhoid fever, which is due to inanition, and subsides when nourishment is given. The diarrhea in typhoid may be merely the consequence of the purgatives that were taken during the first period of malaise before the disease was recognized. In this communication he refers to artificial constipation, emphasizing the ease with which the delicate mechanism of defecation is thrown out of gear. Even one irregularity may breed constipation, and the fear of "fecal impotency" may perpetuate it.

Journal de Chirurgie, Paris

22: 279-390 (Oct.) 1923

Access to Kidney from Front. L. Bazy.—p. 279.
*Kyphosis from Tetanus. T. Wilhelm.—p. 295.
Treatment of Acute Intestinal Occlusion. B. N. Calcagno.—p. 313.

Kyphosis from Tetanus.—Wilhelm tabulates the details of eleven cases on record, and describes two personal cases in which compression of dorsal vertebrae entailed kyphosis. There was nothing to suggest tuberculosis, and the deformity remained stationary. Disturbances in circulation led to osteoporosis. Both of his patients had been in bed on account of tetanus for eight or nine weeks, and both had lain mostly on one side with the spine much curved. Certain vertebrae had evidently suffered, and a slight gibbus was the result.

Revue de Chirurgie, Paris

61: 473-550, 1923

*Nontuberculous Hip Joint Disease. Frœlich.—p. 473.
Regional Anesthesia for Surgery of the Kidneys. J. Duvergey.—p. 530.
Fracture of Costal Cartilages. Oudard and G. Jean.—p. 540.

Nontuberculous Hip Joint Disease in the Young.—Frœlich advocates relative rest, the child being up and about for a few hours each day but reclining the balance of the time. He advises the use of a gynecologic thigh-spreading device to avert contracture in adduction and deformity from the slipping down of the femur head. When the child sits up to a table to eat or study, he should sit straddling a bench or stool, his legs pendent. Frœlich advises calcium phosphate, iodid, possibly with mercury, and organotherapy. In 3 of his cases the children were of the adiposogenital type, with a tendency to atrophy of the gonads or thyroid, or changes in the sella turcica. When the patient has severe adduction contracture, surgical measures may be necessary.

61: 551-622, 1923

Giant Appendix. A. Hamant and C. Mathieu.—p. 551.
*The Future of the Trephined. L. Weitzel.—p. 586.
*Lesions in Space Below Liver. J. Lacouture and R. Damade.—p. 613.

The Future of the Trephined.—Weitzel has reexamined 340 soldiers from one to seven years after they had been trephined. The present status shows that the extent of the opening in the skull has nothing to do with the ultimate outcome; this depends entirely on the condition of the brain. Hence we need not hesitate to make ample openings in the skull. His experience further teaches that minute fragments of projectiles in the brain may allow long survival, and it is better to leave them unmolested rather than damage the brain seriously in removing them. None of the men have required internment for mental disease, but in 24.5 per cent. of the cases the mind is somewhat affected, from simple impairment of the memory in half of them to psychic asthenia and prostration in 2 per cent.

Lesions in the Region Below the Liver.—Lacouture and Damade report a case of adhesions binding the duodenum to the gallbladder. The latter organ was removed and the adhesions torn, but no trace of inflammation could be found in the gallbladder although all the symptoms subsided afterward. In this and in two similar cases the women had symptoms in the stomach region with tardy pain, but nothing characteristic of the perivisceritis in this "subhepatic crossroads." When the gallbladder is involved, the cholesterol content of the blood is usually more than 2 gm. In the case of chronic cholecystitis it ranged from 2.5 to 3.78 gm.

61: 623-710, 1923

*Embolism in the Limbs. L. Sencert.—p. 623.
*The Blood in Nervous Shock. R. Simon and R. Fontaine.—p. 637.
Granuloma of the Mamma. E. Stulz and R. Fontaine.—p. 646.
Deformity of Spine with High Scapula. E. Allenbach.—p. 659.
*Vaccine Therapy in Urethritis. A. Boeckel and F. Bilger.—p. 672.

Arteriotomy for Embolism in the Limbs.—Sencert's review of recent operations to remove an embolus shows success in more than 50 per cent. of the cases operated on in time.

Nervous Shock.—Simon and Fontaine call attention to their discovery that, in animals, deep anesthesia prevents the hemoclastic shock. All the elements of the hemoclastic crisis can be explained simply as a nervous phenomenon of reflex order. They add that inadequate anesthesia—which allows the hemoclastic shock to develop—may have been the cause of the fatal mishaps in certain minor operations.

Vaccine Therapy in Gonococcal Urethritis.—Boeckel and Bilger treated 36 chronic cases with an autogenous vaccine for the gonococcus and associated bacteria, and 29 without the gonococcus. In the first group, 91.17 per cent. were cured, and in the other group 93.10 per cent. All were old refractory cases, in some of several years' standing. The sperm should be utilized for making the vaccine, and cultures should always be made from the sperm as the test of final recovery.

Chirurgia degli Organi di Movimento, Bologna

7: 413-623 (Oct.) 1923

*Experimental Rickets. G. Protti.—p. 413.
Spina Bifida in Five Months' Fetus. G. Faldino.—p. 441.
Histochemistry of Rice-Like Granules. P. Sannazzari.—p. 453.
*Abnormal Closure of Cranial Sutures. A. Merlini.—p. 461.
Postanesthetic Paralysis. E. Magni.—p. 518.
Free Bodies in Hip Joint. S. Vacchelli.—p. 527.
*Treatment of Rickets. U. Montanari.—p. 541.
Fracture of Neck of Femur. G. Valtancoli.—p. 551.
Bone Lesions Secondary to Leg Ulcers. A. Zaffagnini.—p. 557.
Posterior Luxation of Radius. G. Roello.—p. 569.
Reduction of Fractured Patella. O. Cignozzi.—p. 579.
Paralysis of Hypoglossal Nerve. S. Vacchelli.—p. 589.
Fracture of Astragalus. F. Satta.—p. 594.
Tuberculous Lesions in Scapula or Pubis. G. Merluzzi-Medici.—p. 597.
Schlatter's Disease. C. Bortolotti.—p. 601.
Orthopedic Surgery in Germany. F. Satta.—p. 604.

Experimental Rickets.—The rickets was induced in puppies and chickens with strontium lactate. The better the general condition, the more rapid the resorption of the tissues in the hyperostosis and osteosclerosis that developed. Protti states that the various segments of the skeleton had regained their normal aspect and structure when examined 200 days after suspension of the drug.

Pathologic Closure of Cranial Sutures.—Merlini discusses the various clinical pictures that may be induced by premature ossification of the sutures or other pathologic conditions involving them, describing six clinical cases of steeple skull. He advises operating in the third to fifth years, as after six years the injury to the brain is liable to be irreparable. The craniotomy must be ample. He reiterates that an early diagnosis is the main thing, operating at once when choked disk, headache, nystagmus, vomiting or convulsions are explained by the roentgen-ray findings, the lordosis of the base of the skull, the ossified sutures, etc. In Merlini's cases some one suture had been able to spread and thus partially compensate for the pathologic conditions, and no symptoms called for intervention. The six subjects were from 11 to 27 years old, and all but two were males.

Treatment of Rickets.—Montanari's serial roentgenograms show the prompt improvement in cases of rickets under treatment with olive oil, either with or without phosphorus. This suggests, he says, that the benefit from cod liver oil is due merely to the fat.

Rivista di Clinica Pediatrica, Florence

21: 577-640 (Oct.) 1923

*Etiology of Eruptive Diseases. A. Amato.—p. 577.
*Treatment of Whooping Cough. P. Galli.—p. 600.
Rat-Bite Disease in an Infant. T. Nigro.—p. 615.

Etiology of Exanthematous Diseases.—Amato claims that the micro-organisms he found in scarlet fever in 1921 are identical with the description recently given of the micro-organism isolated by Di Cristina, Caronia and Sindoni.

Treatment of Whooping Cough.—Galli finds that six to ten injections of ether (0.5 c.c.) repeated every day or every other day have a favorable action in the convulsive state. Vaccines from Bordet-Gengou's bacillus have a fair preventive action. Large doses are also useful in the first stage of the disease.

Anales de la Facultad de Medicina, Montevideo

8: 619-792 (Aug.) 1923

*Pituitary Extract. A. Turenne.—p. 625.
*Fibroma of the Nasopharynx. J. M. Alonso.—p. 631.
Extragenital Primary Syphilitic Lesions. J. May.—p. 666.
Typhoid Fever in Young Infants. C. Pelfort.—p. 682.
*Polyserositis. M. Ponce de León.—p. 691.
The Basal Metabolism. J. Montes Pareja.—p. 773.

Pituitary Extract.—Turenne publishes an open letter in reply to the question-blank sent out by de Cotret of Montreal. Turenne says that the present tendency to abuse of pituitary extract is certain to discredit this extremely valuable drug. He reiterates that the indications for its use are moderate inertia of the uterus, when there is no mechanical obstacle to delivery, and there is no reason to suspect weakness or excessive fatigue of the uterine muscle. Heart and kidney disease, goiter, pregnancy toxemia and emphysema are further contraindications. He has had one fatal case in his service although all the indications and contraindications had been scrupulously observed, and several women have died of those brought in after pituitary had been given outside the hospital. Months pass in the maternity in his charge without pituitary extract being considered necessary. "No drug has yet been discovered that has an action physiologically identical with that of the normal mechanism of delivery."

Fibromas in the Nasopharynx.—In Alonso's illustrated study of this subject, he comments on the rarity of fibromas in women outside of the pelvis.

Polyserositis in Children and Adults.—Ponce de León describes the history and present status of polyserositis, with reports of instances of each type, including the syphilitic and cancerous. In one case the sarcomatous polyserositis seemed to be primary, with an acute syndrome. In one girl, aged 5, acute leukemia seemed to be responsible for the polyserositis, while in one boy of 14 it was evidently secondary to an epithelioma of the testis. In one young woman the peritonitis had subsided and there was a silent interval of five years after the ascites before the pleuritis developed; pericarditis soon followed.

Archivos Latino-Amer. de Pediatría, Buenos Aires

17: 641-688 (Sept.) 1923

*Misleading Agglutination Test. S. E. Burghi.—p. 641.
Familial Idiocy and Consanguinity. J. Bonaba.—p. 652.
Forms of Tuberculosis in Young Infants. J. P. Garrahan.—p. 657.
Poisoning from Datura. N. Leone Bloise.—p. 665.

Misleading Serologic Tests.—The serum of the girl aged 7 agglutinated typhoid bacilli, but necropsy revealed merely miliary tuberculosis, with no trace or history of typhoid. In a few cases of unmistakable typhoid described, the agglutination test was constantly negative.

17: 689-736 (Oct.) 1923

Syphilis Acquired by Infant. Maria Armand Ugón.—p. 689.
*Typhoid Parotitis. M. A. Jáureguy.—p. 692.
Recurring Chorea in Three Sisters. F. Bazán.—p. 695.
Cerebellar Tumor. V. Escardó y Anaya.—p. 701.
Meningo-Encephalitis from Inherited Syphilis. Two Cases. L. K. Wimmer.—p. 714.
Thrombophlebitis of Lateral Sinus. J. C. Munyo.—p. 719.
Albumin Milk in Catarrhal Enteritis. E. Davidsohn.—p. 724.

Typhoid Parotitis.—In both of Jáureguy's two cases, the suppurating parotid gland ruptured spontaneously into the external auditory passage. The girls, aged 13 and 14, both recovered.

Crónica Médica, Lima

40: 193-224 (June) 1923

*Rhizomelic Spondylosis. Max Gonzáles Olaechea.—p. 193.
Opening Lecture on Therapeutics. B. Manrique.—p. 200.
Albumin Milk for Infants with Intestinal Intoxication. R. Neuhaus.—p. 206.

Rhizomelic Spondylosis from Tuberculous Rheumatism.—In the case described, the lesions correspond perfectly with those of Poncet's "rheumatism of tuberculous origin." Some of the epiphyses have worn away, entailing dislocations, Poncet's "dislocating arthritis." The spinal cord seems to be intact. True rheumatism never entails true ankylosis, and absence of benefit from the salicylates excludes it in this case. The patient is a man of 56, and he seems to be improving under tuberculin treatment. Gonzales adds that he has had excellent results in various other cases from tuberculin treatment. In one case under treatment for two years, progressive recovery followed a year of tuberculin treatment, and the man has been completely cured for a year, resuming the practice of his profession.

40: 225-256 (July) 1923

Aneurysm of Thoracic Aorta. Max Gonzáles Olaechea.—p. 225.
*Epidemic Encephalitis, Especially in Peru. L. D. Espejo.—p. 231.
Cont'd.

40: 257-288 (Aug.) 1923

Suspensory in Gonorrhea. E. Escomel.—p. 257.
Welfare Work for Young Infants. Eyzaguirre.—p. 259. Idem. Morquio.—p. 275.

Epidemic Encephalitis in Peru.—Espejo remarks that this disease seems to offer the most complex and transcendent

field of neurology in any age. In the brief space of seven years it has brought about the most important revolution recorded in the history of neurology. The first two cases reported in South America were in Uruguay, in 1917. Brazil soon followed, and Monge reported a case at Lima in 1919. The disease appeared in Argentina and Chile in 1920. His monograph is not yet completed.

Gaceta Médica de Caracas

30: 225-240 (Aug. 15) 1923

*Bronchial Spirochetosis. J. R. Risquez.—p. 225. Cone'n, p. 241.
Roentgen-Ray Examination Before Therapeutic Pneumothorax. Castillo-Gutiérrez.—p. 228.
Tests of Renal Function. L. Razetti.—p. 230.
*Bilateral Kidney Calculi. L. Razetti.—p. 233.

Bronchial Spirochetosis.—This instalment of Risquez' monograph is accompanied by a colored plate showing the aspect of the sputum and the Castellani spirochetes. The previous instalments were summarized on page 1729, Nov. 17, 1923. In examining 200 persons, including 14 healthy subjects, he found these spirochetes in 29 per cent.; associated with tubercle bacilli in 4 per cent. Tubercle bacilli alone were found in 23 per cent. and the findings were negative in 44 per cent. The disease seems to be contagious, and antimony by the vein is the most effective treatment, although arsenic by the mouth gave favorable results also.

Bilateral Nephrolithiasis.—On the basis solely of the roentgen-ray findings and the Ambard constant, Razetti slit each kidney and removed several calculi. He operated first on what he supposed was the most pathologic kidney, but the operation on the other, three months later, showed graver conditions. Prompt recovery followed. In thirty-three double operative cases on record, the mortality was 33 per cent.

Revista de la Asoc. Méd. Argentina, Buenos Aires

36: 427-551 (Aug.) 1923

Preparation of Insulin. A. Sordelli and Venancio Deulofeu.—p. 427.
*Action of Insulin on Animals. B. A. Houssay et al.—p. 430.
*Pressure of Cerebrospinal Fluid. J. L. Celasco.—p. 456.
Electrodialysis in Analytic Chemistry. R. Wernicke.—p. 472.
Digestive Disturbance After Gastro-Enterostomy. R. Novaro and L. Bravo Zamora.—p. 479.
Artificial Pneumothorax Versus Thoracoplasty. C. Fonso Gandolfo.—p. 514.
Malignant Ulcer at the Pylorus. G. Peco.—p. 518.
*Share of Interbrain in Exophthalmic Goiter. C. P. Waldorp.—p. 525.
Glioma of Retina. P. Satanowsky.—p. 537.
Sarcomatous Angioma of Orbit. Jorge and Gil.—p. 546.

Action of Insulin on Different Species of Animals.—Houssay and his co-workers experimented with seventeen different species of vertebrates. The insulin induced hypoglycemia in all, most pronounced in the young, and after inanition. Collapse or convulsions occurred only when the glycemia was less than 0.45 per thousand in rabbits and 0.3 in dogs. The fatal symptoms were alike in all; under intravenous or intraperitoneal injection of glucose, the symptoms rapidly improved. One rabbit in hypoglycemic coma got up and ran about, two minutes after the injection of the glucose. The margin of safety is wider in the carnivora than in the herbivora. Fowls are more resistant, and reptiles and batrachians still more. The species found most sensitive were the rat, rabbit, guinea-pig, dog, horse, sheep and goat.

Artificial Modification of Pressure in Cerebrospinal Fluid.—In Celasco's twenty-two dogs, injection of distilled water by the vein increased the pressure in the cerebrospinal fluid for at least ninety minutes, but hypertonic saline solutions by the vein or mouth reduced the pressure proportionally to the concentration of the solution. The only by-effects seemed to be in the respiration, which became superficial and slower.

Share of Thalamencephalon in Exophthalmic Goiter.—Waldorp reiterates that all the phenomena of the so-called vegetative sphere are under the control of centers in the interbrain. He presents arguments to prove that these centers are responsible for part of the symptoms in exophthalmic goiter hitherto ascribed too exclusively to the thyroid. The toxic influence from the thyroid affects them only secondarily, but their involvement entails the tremor and certain other elements of the clinical picture of exophthalmic goiter.

Semana Médica, Buenos Aires

2: 281-336 (Aug. 16) 1923

*Pleuritis at the Apex in Children. J. P. Garrahan.—p. 281.
*Pruritus in Syphilis. N. V. Greco.—p. 293.
Defensive Ferments in Endocrine Disease. R. Novaro et al.—p. 295.
Traumatic Cerebrospinal Rhinorrhea. Olmos and Lizondo.—p. 305.
Tardy Roentgen-Ray Toxemia. C. Heuser.—p. 309.
*The Infant. J. C. Navarro and F. Bazán.—p. 311. Cont'n.
Gastric Ulcer. A. Galindez.—p. 315.
*Tobacco Amblyopia. E. Adrogué.—p. 320.
Hospital Management. N. Capizzano.—p. 326. Cont'n.

Pleuritis at the Apex.—Garrahan had seven children under observation for years who for a long time had presented dulness at one apex and a uniform roentgen-ray shadow. Some times there was fever, but tubercle bacilli were never found, and the condition gradually returned to normal in from one month to two years. The clinical picture seems to be the same as Eliasberg's "epituberculous infiltration" and Engel's "paratuberculous infiltration." The pathologic anatomy is not known, but Garrahan is convinced that the process in question is in the pleura, not in the lung. The fibrinous exudate is very slowly resorbed. He proposes as a more suitable term for it, "pleuritis at the apex in children with tuberculous tracheobronchial glands or other localization of tuberculosis." In two of his cases, glands in the neck suppurated, and one child presented phlyctenular conjunctivitis. The Wassermann reaction was positive in one. Treatment was various, but always tonic and symptomatic, and all the children recovered. The ages ranged from 15 months to 8 years.

Pruritus in Syphilis.—Greco declares that pruritus sometimes may be the clue to unsuspected syphilis, especially when it is persistent, with exacerbation toward night. The pruritus may be long in feeling the effect of treatment for the syphilis. It is possible, he suggests, that pruritus is a fourth form of cutaneous sensibility, with special organs and centers. Of those who have consulted him on account of pruritus in the ear, vulva, anus, face, scalp, neck, trunk or limbs, or general pruritus, absolutely nothing to explain it was found in a large proportion of cases except inherited or acquired syphilis, often unsuspected.

The Infant.—This is the fifth chapter of Navarro and Bazan's monograph on infant feeding and nutritional disturbances in infants.

Tobacco Amblyopia.—Adrogué asserts from study of 48 cases of amblyopia from axial neuritis, due to nicotin poisoning, that the quality of the tobacco is at fault—the exceptional nicotin content. Imperfectly dried, it does not burn well. In this group of 48 out of the total 205 cases of disease of the optic nerve in the last two years, no other cause could be discovered, although alcoholism may have cooperated. Only 5 used cigarets; the majority smoked four or five cigars a day. The initial paracentral scotoma soon yields to central scotoma, especially for colors, unless the patient stops smoking and drinking. Potassium iodid may prove useful, but even at the best, a small paracentral scotoma generally persists.

2: 337-392 (Aug. 23) 1923

*Painless Puncture for Injections. A. A. Fernández.—p. 337.
*Plastic Operations on the Urethra. J. Salleras Pagés.—p. 339.
Spontaneous Rupture of Uterus During Delivery; Subtotal Hysterectomy; Recovery. L. S. Gismondi.—p. 372.

Painless Puncture for Injections.—Fernández has confirmed Greco's assertions that by making the puncture in the normal furrows of the skin, the puncture is practically painless. The ridges or crests of the papillae lie between the furrows, while the furrows correspond to the prolongations of the epidermis thrust inward between the rows of papillae. If the puncture needle is fine enough to keep inside this cone, the sensation will be merely that of a simple prick, without pain.

Indications and Results of Operations on the Urethra.—The various methods for plastic operations on the urethra are compared, with 122 illustrations and numerous case reports. Salleras Pagés emphasizes the importance of refraining from the use of a self-retaining catheter when there is a chance of healing by primary intention. He advocates

Rochet's method of separating the middle perineal aponeurosis for access to the upper urethra.

Beiträge zur klinischen Chirurgie, Tübingen

130: 1-223, 1923

Mobilization of Stiff Elbow. A. Tietze.—p. 1.
*Diverticulum of the Bladder. L. Simon.—p. 4.
*Postoperative Peptic Ulcer. F. v. d. Hütten.—p. 20.
Arteriolization of Veins in Aneurysm. P. Hermannes.—p. 40.
*Surgery of Gluteal Region. S. E. Ssokoloff.—p. 60.
*Swollen Mesenteric Glands. H. Heusser.—p. 85.
Congenital Pseudarthrosis of Thigh. W. Müller.—p. 99.
Fracture of Cuneiform Bone. O. Kingreen.—p. 111.
Tuberculosis of Parotid Gland. A. Braun.—p. 118.
*The Defensive Ferments. E. Küster and F. Bode.—p. 130.
Experimental Research on Loose Bodies in Knee. A. Schmidt.—p. 142.
Cyst in Common Bile Duct. M. Krabbel.—p. 159.
Origin of Loose Bodies in Joints and the Mechanics of the Knee Joint. H. Burckhardt.—p. 163.
Cholesteatoma in Frontal Sinus. H. Wolff.—p. 215.

Diverticulum of the Bladder.—Simon's verdict is that discovery of a diverticulum should be followed by a radical operation, whether or not it has ever caused symptoms. At least, the diverticulum should be removed at the first sign of disturbances from it.

Peptic Jejunal Ulcer.—Hütten enumerates the arguments for and against the various theories that have been advanced to explain postoperative jejunal ulcers. The consensus of opinion seems to be that a number of factors probably cooperate, but the primary factor is some local injury. His experimental research on fourteen dogs has apparently established that Eiselsberg's method of exclusion of the pylorus causes an accumulation of injurious factors. Dogs treated with the Eiselsberg exclusion technic developed large jejunal ulcers, but none, with the pylorus permeable, after gastroenterostomy.

Surgical Anatomy of Gluteal Region.—Ssokoloff comments on the gravity of infectious processes in the deep pocket in the gluteal region between the gluteus maximus and the deeper muscles. This deep interfascial recess opens into the deep interfascial spaces in the thigh, and this explains the tendency to gravity abscesses, etc., down to the knee or even ankle. He injected plaster into the cadaver and was able to force it not only downward into the thigh but forward into the small pelvis.

In one male cadaver, aged 63, the plaster passed along the posterior surface of the sciatic nerve to and through the three anterior foramina in the sacrum. His experiments demonstrate that the incision for a phlegmon anywhere in the body must be planned to conform to the plane of the interfascial interval and the loose cellular tissue of the region. With a deep phlegmon in the gluteal region, the gluteus maximus must be spared as much as possible. Three incisions are advocated: one parallel to the greater trochanter, along the outer segment of the tendon of the gluteus maximus; the second in the upper third of the posterior aspect of the thigh, below the gluteal fold, parallel to the axis of the leg; and the third, from the upper margin of the gluteus maximus down to the greater trochanter. The upper limits of the deep interfascial space reach to the superior margin of the gluteus maximus. These incisions open up the phlegmon space in its entire length, and as the patient lies on that side, drainage is complete and circulation unhampered. If these measures do not suffice, the gluteus maximus must be temporarily detached and turned back inward and upward. This is easily done by connecting the three incisions. He adds that intragluteal injections should be made in the outer quadrants, to avoid injury of vessels and nerves. Temporary detaching of the pyriform muscle allows access to the vessels and nerves in the great sacrosciatic foramen.

Simple Inflammatory Swelling of Mesenteric Lymph Glands.—Heusser's three colored plates show the most typical findings from forty cases of this kind in the last two years. Operative measures are required the same as for chronic appendicitis. If no primary focus can be found, the diagnosis of simple hyperplasia can be accepted.

The Defensive Ferments.—The importance of the defensive ferments for surgery is emphasized, and of the interferometer for their estimation.

Deutsche medizinische Wochenschrift, Berlin

49: 1253-1286 (Oct. 5) 1923

Insulin Treatment in Diabetes. Wandel and Schmoeger.—p. 1253.
Softening of the Semilunar Bone. Sonntag.—p. 1255.
Action of Aspiratory Mask on the Circulation. H. Sachs.—p. 1258.
*Blood Transfusion and Reinfusion. R. Zimmermann.—p. 1262.
Treatment of Congenital Syphilis. Kuntze and Roettig.—p. 1264.
Cystoscopic Gastroscope. W. Sternberg.—p. 1265.
Internal Hydrocephalus. A. Hofmann.—p. 1266.
*Rickets. S. Levy.—p. 1267.
Disinfection with Chloroform and Toluol. E. Loewenthal.—p. 1268.
Removing Warts with High Frequency Current. W. Hurwitz.—p. 1269.
Recent Progress in Otology. Klestadt.—p. 1269.
English Conscientious Objectors. H. Boeing.—p. 1270. Cont'n.
Vocational Advice for Tuberculous Children. L. Dünner.—p. 1271.
The Practical Year After Graduation. Hansberg.—p. 1273.

Blood Transfusion and Reinfusion.—Zimmermann reserves the intravenous reinfusion of intraperitoneal hemorrhages in ruptured extra-uterine pregnancy only for the severest cases. It is not without danger, and the peritoneum is capable of resorbing large amounts of blood.

Rickets.—Levy sees the main point in the pathogenesis of rachitic changes in the endothelium of the capillaries, which has lost the ability to produce intercellular substance.

49: 1321-1354 (Oct. 19) 1923

*Action of Insulin. A. Krogh.—p. 1321.
Chemotherapy and Staphylococci. Morgenroth and Wreschner.—p. 1322.
*Tuberculosis in Guinea-Pigs. H. Kleinschmidt.—p. 1324.
Bismuth in Experimental Syphilis. S. Sei.—p. 1327.
Action of Colloidal Metals. E. Kramár and J. Tomesik.—p. 1328.
*Experimental Hermaphrodism. W. Krause.—p. 1330.
*Metabolin. E. Vahlen.—p. 1332.
Sequelae of Encephalitis. M. Meyer.—p. 1333.
*Myopia and Heredity. Paderstein.—p. 1337.
Artificial Perforations of the Uterus. H. Wildegans.—p. 1338.
Dark-Field Condensors. F. W. Oelze.—p. 1340.
Artificial Daylight in Laboratory and Examining Room. E. W. Taschenberg.—p. 1341.
Hypnosis in Labor. U. Franke.—p. 1341.
Treatment of Torpid Wounds. W. Grossmann.—p. 1342.
Emigration of Physicians to Brazil. O. Köster.—p. 1342.

Action of Insulin.—Krogh considers the rapid absorption of insulin as a drawback. He mentions encouraging results obtained by Hagedorn in making preparations of insulin which are absorbed slowly.

Tuberculosis in Guinea-Pigs. — Kleinschmidt found no marked differences in the course of tuberculosis in new-born or fully grown guinea-pigs, if their weight was taken as the basis for the amount of bacilli injected. The tuberculin reaction is slight and appears late in animals infected immediately after birth. The weight of these animals was not affected for quite a time, while the adult animals decreased in weight soon after the infection.

Experimental Hermaphrodism. — Krause working in Lipschütz' institute confirms the possibility of producing artificial hermaphrodism by intratesticular implantations of ovarian substance. The action did not seem to depend on the amount of substance transplanted in the guinea-pigs used.

Metabolin.—Vahlen recalls his previous publications on a substance isolated from the pancreas and called by him "metabolin." It accelerates the alcoholic fermentation and decreases the amount of sugar in experimental diabetes. Acids change it to a substance with opposite properties ("antibolin"). Therefore it is not suitable for oral administration. His further experiments enabled him to produce from yeast and pancreas a substance which is not changed by acids ("irreversible metabolin"). This reduces epinephrin glycosuria in rabbits.

Myopia and Heredity.—Paderstein does not consider pathologic the low myopias (1-5 D) due to school or fine work. They have the advantage of moderating presbyopia, and are a disadvantage only in military service. High myopia is a recessive hereditary character, the same as squint, which is frequently due to differences in the refraction of the eyes. Laqueur found that astigmatism may be hereditary even in such details as the position of the axis of the curvature.

Deutsche Zeitschrift für Chirurgie, Leipzig

182: 289-421 (Sept.) 1923

*Cryptogenic Peritonitis. F. Mandl.—p. 289.
Loose Bodies in Hydrocele. L. Ritter.—p. 308.
*Resorption from Serous Cavities. G. Magnus.—p. 325.

*Treatment of Angina Pectoris. W. Odermatt.—p. 341.
*Fields without Vessels. A. Melnikoff.—p. 355.
Parathyroid Grafts in Parkinson's Disease. B. Breitner.—p. 372.
Traumatic Hydronephrosis. G. Golm.—p. 386.
Injury Affecting Epiphyseal Growth. H. Jessen.—p. 398.
Occlusion of Common Bile Duct by Echinococcus Cysts. O. Kingreen. —p. 404.
Xanthofibrosarcoma. T. Hünermann.—p. 410.
Extirpation of Parotid Gland. H. Burckhardt.—p. 416.

Cryptogenic Peritonitis.—Mandl reports ten cases of cryptogenic peritonitis. He concludes from observations after colostomies that a macroscopically intact intestine may allow transmigration of micro-organisms. All of these patients died except two with gonococcal peritonitis and one of obscure origin.

Resorption from Serous Cavities.—Magnus has confirmed the presence of minute openings between the lining cells in serous cavities but not in synovial cavities. The stomata may be closed, as he found in a case of diffuse subfebrile peritonitis.

Surgical Treatment of Angina Pectoris.—On the basis of Koster's and Tschermak's demonstration that the depressor nerve is the sensory nerve of the root of the aorta, Eppinger proposed resection of this nerve in the treatment of angina pectoris. This operation has been done in five cases to date, and Odermatt reports a sixth case, all with favorable results. His patient had no further attacks, but he died a week later from his heart insufficiency.

Fields Without Vessels.—Melnikoff explains the necessity for cutting organs only in a radial, spiral direction toward the hilus, and at certain angles, to avoid the vessels. He found certain laws in the distribution of vessels which are important for avoiding unnecessary injuries, and describes them with illustrations.

Jahrbuch für Kinderheilkunde, Berlin

103: 1-112 (Sept.) 1923

Nutritional Disturbances and the Blood. E. Rominger.—p. 1.
*Lactase. E. Freudenberg and P. Hoffmann.—p. 21.
Genius Epidemicus in Influenza. F. Limper.—p. 33.
Histology of Scarlet Fever. M. V. Ambrus.—p. 41.
*Goat's Milk Anemia. E. Brouwer.—p. 51.
Typhoid. N. Umikoff.—p. 65.

Lactase.—Freudenberg and Hoffmann found that the milk sugar-splitting ferment from infants has better conditions for action in human whey, and lactase from calves in cow's whey. The action is accelerated by phosphate ions and inhibited by calcium, in different concentrations for each species. The optimum of hydrogen ion concentration is at 5 *pH*. These differences may account for certain disturbances in artificially fed infants.

Goat's Milk Anemia.—Brouwer here concludes his series of papers on anemia due to goat's milk. Infants who are fed exclusively with it, starting from the first two and a half months of age, become anemic almost without exception. The anemia occurs with thrombopenia and a high hemoglobin index. Buttermilk produces favorable results.

Klinische Wochenschrift, Berlin

2: 1725-1788 (Sept. 17) 1923

*Dilation of Capillaries and Shock. Ebbecke.—p. 1725.
Condition and Disease in Psychiatry. A. Bostroem.—p. 1728.
*Epidemic Encephalitis. F. Jahnel and E. Illert.—p. 1731.
*Sensitization in Eczema. J. Jadassohn.—p. 1734. Conc'n.
*Dyspnea in Nephritis and Hypertension. F. Kornfeld.—p. 1739.
Viscosity and Thyroid Function. W. v. Frey and E. Stahnke.—p. 1742.
*Hydration of Serum Proteins. P. Spiro.—p. 1744.
*Treatment of Roentgen Sickness. H. Nevermann.—p. 1747.
Large Doses of Iron in Anemias. G. Barkan.—p. 1748.
*Light Baths and Blood Calcium. Rothman and Callenberg.—p. 1751.
The Teeth in Congenital Syphilis. H. Pflüger.—p. 1753.
Technic of Bruck's Reaction. C. Bruck.—p. 1755.
*Fat Metabolism and Vitamin A. Hamburger and Collazo.—p. 1756.
Liebreich's "Eosinophilia in Vitro." Neumann and Zimonjic.—p. 1756.
Ninhydrin Reaction of Eosinophil Granules. Berg.—p. 1757.
"Pyocyaneus-Meningitis." C. Sonnenschein.—p. 1758.
Late Effects of Epidemic Encephalitis in Children. Hofstadt.—p. 1759.
Radium Treatment of Benign Gynecologic Bleeding. H. Eymer.—p. 1761.
Practitioner and Tuberculosis Welfare Work. Engelsmann.—p. 1765.

Dilatation of Capillaries and Shock.—Ebbecke draws a parallel between urticaria and anaphylactic shock. The apparent vasoconstriction in liver and lungs in shock is secondary. The primary change is a vasodilatation with an immediate transudation, which compresses the capillaries.

Etiology of Epidemic Encephalitis.—Jahnel and Illert inoculated rabbits with human brain tissue from subjects with various diseases. They were able to produce by this means in some instances an encephalitis. These experiments illustrate the necessity of further controls in experimental research on encephalitis. The authors do not deny the possibility that the real virus of encephalitis is the agent in some of the successful inoculations reported by other authors, but it is difficult to differentiate the actual virus. The destruction of the virus by serum from patients is one of the revealing signs.

Sensitization in Eczema.—Jadassohn reviews the empiric foundations and the explanations of eczema due to specific and nonspecific sensitization, especially against nonprotein compounds.

Dyspnea in Nephritis and Hypertension.—Kornfeld studied the carbon dioxid tension and alkali reserve in dyspneic patients with nephritis and hypertension. His observations confirm the view that dyspnea is caused in the great majority of such patients by insufficiency of the heart. Determination of the carbon dioxid tension in the alveolar air is just as misleading here as in cyanotic induration of the lungs. It seems that the patient is not able to exhale the real alveolar air. The "great breathing" in nephritis is not a uniform condition. Its etiology is not clear.

Hydration of Serum Proteins.—Spiro finds that the healthy organism keeps the colloidal state of the serum proteins at a minimum of hydration (maximum of dehydration). Thus it obtains a minimum of specific viscosity and subsequently an easy flow of blood. The specific viscosity is the proportion between the viscosity of the given serum and the viscosity of a normal serum with the same concentration of colloids.

Treatment of Roentgen Sickness.—Nevermann, in cases of severe general discomfort after roentgen-ray irradiations, administers salt solutions or brandy, or injects milk.

Light Baths and Blood Calcium.—Rothman and Callenberg found an increase in the calcium concentration of the serum after exposures of the whole body to a strong light.

Fat Metabolism and Vitamin A.—Hamburger and Collazo found lower amounts of fat in the blood of children to whom they were administering cod liver oil than in the controls. The difference was also very marked after a fat meal.

2: 1821-1868 (Oct. 1) 1923

*Bread. R. O. Neumann.—p. 1821.
*Surgical Treatment of Asthma. H. Kümmell.—p. 1825.
Alkali Reserve in Edema. K. Gollwitzer-Meier.—p. 1827.
Pathology of Death from Heart Failure. Bohnenkamp.—p. 1829.
*Suboccipital Puncture. K. Eskuchen.—p. 1830.
*Action of Nitroglycerin. M. Grossmann and J. Sandor.—p. 1833.
*Colloidal Stability of Serum. Nassau and Hendelsohn.—p. 1835.
Estimation of Bile Acids in Serum. S. Frey.—p. 1837.
Permeability of Cells. Handovsky and Masaki.—p. 1838.
Boiled Human Milk. E. Thomas.—p. 1839.
*Transmission of Effects of Heart Nerves. O. Loewi.—p. 1840.
Anaphylaxis and Nervous System. E. A. Spiegel and K. Kubo.—p. 1841.
Incubation in Passive Anaphylaxis. A. Shiga.—p. 1841.
Metastases of Chorio-Epithelioma. H. Deist.—p. 1842.
*Apparatus for Better Hearing. E. Fassl.—p. 1844.
Children's Tuberculosis Clinic at Jena. J. Duken.—p. 1848.
Survey on Hyperglycemia. M. Nothmann.—p. 1849.

Bread.—Neumann reviews the history and composition of bread. The same sort of bread is neither agreeable, nor suitable for everybody. The higher protein content of bran bread is of no value, since it is contained in cells which cannot be split in the human digestive apparatus. The propaganda for bread made from whole grain is without foundation except when stimulation of peristalsis is intended.

Surgical Treatment of Bronchial Asthma.—Kümmell resected the three sympathetic cervical ganglia of the left side in four patients suffering from severe bronchial asthma. The operation is theoretically not well founded, but the results were good except in one case, in which the operation was not complete.

Suboccipital Puncture.—Eskuchen describes the technic of puncture of the cisterna cerebellomedullaris.

Action of Nitroglycerin.—Grossmann and Sandor investigated the causes of differences in the action of various prep-

arations containing nitroglycerin. They found that it acts promptly if it is applied on the tongue (Mendel) or simply used with a little (10-15 c.c.) water to cleanse the mouth. No effect was observed if the usual dose was introduced directly into the stomach or duodenum. It is not impossible that a ferment present in the mouth reduces it to a nitrite, for nitrites are always found in the mouth and may even have a significance for the normal regulation of blood pressure. The main point, however, which accounts for its quick action, is its excellent solubility in lipoids, as emphasized by Mendel. They had favorable results in cardiac asthma and saw no bad effects even after years of use.

Colloidal Stability of Serum in Infants.—Nassau and Hendelsohn found that the serum from infants with severe nutritional disturbance was flocculated by lower concentrations of alcohol than the controls. A negative reaction speaks for a localized affection of the intestine, and allows a more conservative treatment (even an attempt to increase the food). The positive cases need a reduction of food. The reaction disappears in from six to ten days after amelioration of the clinical symptoms.

Humoral Transmission of Effects of Heart Nerves.—Commenting on Hamburger's article, reviewed Nov. 17, 1923, p. 1731, Loewi shows that his alleged mere "observation" from 1921, which was the starting point of Hamburger's paper, was a fully conscious experimental proof of the possibility of humoral transmission of vagus and accelerans impulses by the perfusing fluid of the heart.

Apparatus for Better Hearing.—Fassl reviews the indications and limitation of different types of apparatus for patients with impaired hearing.

2: 1917-1964 (Oct. 15) 1923

Psychophysical Coordinated Conditions. A. Kronfeld.—p. 1917.
Sporadic Pellagra in Berlin. A. Buschke and E. Langer.—p. 1921.
*Virulence of Streptococci. E. Philipp.—p. 1925.
*Resistance of Streptococci. N. C. Louros.—p. 1929.
*Calcium and Thrombin. E. Wöhlisch and K. Paschkis.—p. 1930.
Rhythm of Roentgen Reaction in Skin. G. Miescher.—p. 1932.
Chronisepticemia. F. E. R. Loewenhardt.—p. 1933.
*Blood Calcium and Rickets. W. Kneschke.—p. 1935.
*Hormonal Sterilization of Females. L. Haberlandt.—p. 1938.
Mistakes from Initial Irradiation. G. Gabriel.—p. 1939.
Spastic Occlusion of Intestine. E. Melchior.—p. 1940.
Treatment of Syphilis of Infants. S. Engel.—p. 1941.
The Alcohol Question. W. Weisbach.—p. 1944.
Rhythmic Changes of Heart Action. H. Popper.—p. 1947.

Virulence of Streptococci.—Philipp describes his method of Ruge's test. He dilutes 2 to 4 loops of uterine (or vaginal) secretion in a tube of bouillon and inoculates 6 to 8 c.c. of the patient's defibrinated blood with 2 to 6 loops of this bouillon. The amount depends on the number of germs in a smear. He uses 1.5 c.c. of this inoculated blood for an agar plate, incubates the blood and repeates cultures every three hours. If the germs, especially streptococci, are virulent, the subsequent plates show an increase in the number of colonies. If the germs are avirulent, the later cultures are sterile. The method enabled him to make an early correct prognosis in women with fever after childbirth or abortion. Among thirty women operated on for carcinoma of the uterus, only one showed virulent germs before operation. This patient died from sepsis after the operation, while the others recovered. No woman should be operated on for cancer as long as this test demonstrates virulent germs. It seems that the outcome of the test is conditioned chiefly by the virulence of the germs and not by the bactericidal action of the serum, except for a short time before recovery. Prophylactic streptococcus vaccines, injected simultaneously with serum, seemed to give good results. Even when such women became infected, they soon recovered.

Resistance of Streptococci.—Louros found that streptococci which were virulent in Philipp's test, were generally also more resistant against methylene blue.

Calcium and Thrombin.—Wöhlisch and Paschkis prevented coagulation of plasma by adding magnesium sulphate. They dialyzed this mixture at first against a magnesium sulphate solution (to remove the calcium) and then against normal saline. This plasma remained fluid, while the controls, dialyzed against saline with a little calcium, coagulated. They conclude from this and some other experiments with serum that free calcium ions are essential in the first phase of blood coagulation (formation of thrombin), and that the action of oxalates consists only in removing of calcium.

Blood Calcium and Rickets.—Kneschke found an increase in blood calcium in children irradiated with a quartz lamp in treatment of rickets.

Hormonal Sterilization of Females.—Haberlandt was able to sterilize rabbits and guinea-pigs by subcutaneous implantation of ovaries of pregnant animals. Injections of a preparation from normal corpora lutea were unsuccessful, but if extracts of ovaries from pregnant animals or from the placenta were used in large doses, the female rabbit did not admit the male and the development of follicles was inhibited.

2: 1965-2012 (Oct. 22) 1923

Blood Capillaries. W. Heubner.—p. 1965. Cont'd.
Insulin Treatment. C. v. Noorden and S. Isaac.—p. 1968.
Irritability of Nerves in Ligated Extremities. Elias and Kornfeld.—p. 1970.
A Multiple Test of Stomach Functions. H. Strauss.—p. 1971.
*Gastric Juice and Pyloric Area. Koennecke and Jungermann.—p. 1973.
The Blood in Differentiation of Measles and Scarlet Fever. H. K. von Winterfeld and E. Hahne.—p. 1977.
Pyramidon Blood Test. A. L. Molnár.—p. 1978.
*Liver and Diuresis. A. Adler.—p. 1980.
Operated Dislocation of Hip Joint. O. Heitzmann.—p. 1982.
*Roentgenology in Cerebral Adiposity. W. Raab.—p. 1984.
Metabolism in Alcoholics. Faure and Loewe.—p. 1986.
Vitamins. F. Groebbels.—p. 1987.
Origin of Edema. S. Rusznyák.—p. 1988.
Disturbances of Salt Metabolism. K. Csépai.—p. 1988.
Tuberculosis of Urinary System. K. Scheele.—p. 1989.
Rhythmic Changes of Heart Action. H. Popper.—p. 1993. Conc'n.

Gastric Juice and Pyloric Stomach.—Koennecke and Jungermann found in experiments a strong acidity of the juice from the proximal part of the stomach, when the isolated pyloric part remained in the body. Complete removal of the pyloric portion of the stomach—not mere exclusion—is a causal treatment of gastric ulcer.

Liver and Diuresis.—Adler found in severe affections of the liver an inhibition of diuresis and of concentration of the urine.

Roentgenology in Cerebral Adiposity.—Raab examined eighteen patients with complete or partial adiposogenital dystrophy. In twelve the dorsum of the sella turcica was very high, steep, or broad and thick. He believes that in such cases the infundibulum and tuber cinereum can be easily compressed, especially if the pressure in the third ventricle rises. The syndrome is due to an affection of the pituitary gland or the nervous centers or to interruption of the communication between them.

Medizinische Klinik, Berlin

19: 1319-1352 (Oct. 7) 1923

*Sequelae of Dysentery. K. Walko.—p. 1319.
*Size of Primary Tuberculous Focus. A. Ghon and J. Reymann.—p. 1323.
Treatment of Varicose Veins. J. Fabry.—p. 1324.
Influence of Brain on Endocrines. F. Mohr.—p. 1325.
Chronic Glanders in Man. H. Schwarz.—p. 1328.
Treatment of Phlebitis. K. W. Fischer.—p. 1329.
Anacidity and Evacuation of Stomach. M. Kleemann.—p. 1331.
Treatment of Tuberculosis. B. Rohden.—p. 1333.
"Neurectomy of Phrenic Nerve." I. W. Samson.—p. 1333. Reply. I. Zadek.—p. 1334.
Individual Prophylaxis of Syphilis. W. Worms.—p. 1335.
Insulin. K. Brandenburg.—p. 1338.
Uterine Fibroids. E. Runge.—p. 1340.
Recent Progress in Roentgen Diagnosis. L. Freund.—p. 1342.

Sequelae of Dysentery.—Walko finds a lymphatic habitus in many patients with severe dysentery and its sequelae. Catarrhal processes in the whole digestive system and dyspepsia are comparatively frequent. In many cases torpid ulcers of the colon are the cause of the protracted and recurring disturbances. Gastric and duodenal ulcers occur sometimes. It is possible that they are due, like the chronicity of the dysentery, to a special predisposition. Spastic constipation is frequent. Pericolitis is localized usually at the sigmoid flexure. Severe cachexia may develop. Endoscopic examination is necessary, since the subjective disturbances may stop temporarily while the ulcers or a severe catarrh still persist. The treatment consists chiefly in the cure of spasm by mechanical cleaning of the bowel with large enemas. In

exacerbations, saline laxatives (not concentrated), with animal charcoal are beneficial. If there is no improvement in from three to six months and the patient is not cachectic, surgical treatment (preferably appendicostomy) may be tried.

Size of Primary Tuberculous Focus.—Ghon and Reymann report the necropsy findings in two cases to illustrate the necessity to look carefully for remnants of a primary tuberculous focus in the lung in cases with caseous bronchial glands. The focus may be very small. They do not believe the old theory as to the penetration of tubercle bacilli through the intact lung to the lymphatic glands. Careful examination of the lung usually reveals the primary lesion or relics of it.

19: 1353-1386 (Oct. 14) 1923

*Torn Muscles. F. Pels Leusden.—p. 1353.
Heart Function Test. R. Ohm.—p. 1354.
Angina with Extreme Leukopenia. U. Friedemann.—p. 1357.
*Bilateral Jacksonian Epilepsy. M. Löwy and O. Pötzl.—p. 1359.
Endothelioma Over Motor Region. O. Sittig.—p. 1363.
Case of Pellagra. K. Grunenberg.—p. 1365.
Meinicke's Turbidity Reaction. G. Elkeles.—p. 1368.
Practical Gynecology. E. Runge.—p. 1369. Cont'n.
Irradiation in Exophthalmic Goiter. O. Strauss.—p. 1372.
The Antivenereal Disease Law. F. Pinkus.—p. 1384.

Laceration of Muscle Fiber.—Pels Leusden describes the symptoms of slight tears of muscles. They occur not infrequently in sudden movements, especially in middle aged men playing tennis or other games. The patient feels a sudden pain comparable to a stab. Movements are painful, but movements, together with an elastic appliance, are the best treatment of the condition. Unless there is suffusion, the patients are well in two weeks.

Bilateral Jacksonian Epilepsy.—Löwy and Pötzl describe a case of endothelioma over the parietal lobe. The patient had identical attacks of epilepsy on both sides. In spite of this, only one side of the brain was assumed to be affected. After removal of the tumor, which weighed 180 gm., the patient recovered completely and is finishing her law studies.

Monatsschrift für Kinderheilkunde, Leipzig

26: 545-640 (Sept.) 1923

*Vitamins and the Blood. K. Jonas.—p. 545.
Tetany in Children. W. Pohl.—p. 560.
Sour Skimmed Milk in Infant Feeding. E. Hainiss.—p. 568.

Vitamins and the Blood.—Jonas found that hemoglobin and the number of erythrocytes increased markedly in animals fed with germinating oats.

Münchener medizinische Wochenschrift, Munich

70: 1167-1190 (Sept. 14) 1923

*Gonorrheal Lymphangitis. E. Hoffmann.—p. 1167.
*The Vagus and Septic Diseases. E. F. Müller.—p. 1168.
Treatment of Clubfoot. G. Hohmann.—p. 1170.
Epilepsy and Menstruation. F. Winter.—p. 1172.
*Gallbladder Stasis and Colic. P. Zander.—p. 1173.
The Weakly New-Born. J. Schoedel.—p. 1175.
Meningococcus Meningitis. W. Jantzen.—p. 1179.
Intestine Rupture in Autoreduction of Hernia. G. Krauss.—p. 1179.
*Familial Gastric Ulcer. A. Ohly.—p. 1180.
Brain Tumor. H. Curschmann.—p. 1182.

Gonorrheal Lymphangitis.—Hoffmann's two cases illustrate the importance of finding spirochetes before starting to treat seemingly primary syphilitic lesions. A gonococcal lymphangitis of the dorsum of the penis, which may occur especially in mistreated cases, can cause an induration in the sulcus, and this may be complicated by an erosion. The clinical resemblance to a primary syphilitic lesion is great, and only the lack of spirochetes can save the patient from unnecessary distress and treatment. On the other hand, syphilitic lesions developing in the fourth week of gonorrhea, possibly located in the meatus, are frequently overlooked.

The Vagus and Septic Diseases.—Müller believes that an infectious focus acts on the bone marrow by reflex action through the autonomic nervous system. The bone marrow starts to produce more leukocytes, and they are deposited in the vicinity of the focus again by the preponderance of the autonomic tonus in that region.

Gallbladder Stasis and Colic.—Zander points to the possibility of spasms of the sphincter of the duodenal papilla as cause of colic after operations on the gallbladder. Dilatation of the orifice or discission of the muscle is recommended.

Familial Gastric Ulcer.—Ohly publishes short histories of nine families with a striking frequency of ulcers of the stomach and duodenum. He mentions sixty other cases from his experience with similar familial findings.

70: 1243-1264 (Oct. 5) 1923

Sedimentation Speed of Erythrocytes. G. Linzenmeier.—p. 1243.
*Brain in Parkinsonism. F. Lucksch and H. Spatz.—p. 1245.
Indicanemia in Nephritis. E. Schilling and P. Holzer.—p. 1246.
Treatment of Coxa Vara. A. Schanz.—p. 1247.
Impotentia Generandi. H. Higier.—p. 1248.
*Conservative Treatment of Abortion. J. Lovrich.—p. 1249.
Treatment of Syphilis with Bismuth. F. Dietel.—p. 1250.
Soluble Mercury Salts. Ries.—p. 1251.
Abortive Typhoid. W. Blumenthal.—p. 1252.
Cutaneous Inoculation. Ponndorf.—p. 1253.
Repeated Operations in Case of Tertiary Syphilis. J. Denk.—p. 1255.
Isotopic Tuberculin Treatment of Tuberculosis. W. Stoeltzner.—p. 1256.
Kussmaul and Pharmacology. O. Körner.—p. 1256.
Medical Impressions in Trip to Eastern Asia. R. Hoeppli.—p. 1257.
Brain Abscess. H. Curschmann.—p. 1258.

Brain in Parkinsonism.—Lucksch and Spatz examined microscopically the central nervous system in eighteen cases of postencephalitic parkinsonian syndrome. They found slight changes in the usual points of predilection, but marked atrophy of substantia nigra.

Conservative Treatment of Abortion.—Lovrich gives in incomplete abortions 1 gm. of quinin and an equal amount of diethylmalonylurea in one day, divided in five doses. When the pains start, three or four intravenous injections of pituitary preparations are given at ten or fifteen minute intervals. Neither quinin nor pituitary extract treatment should be used in uninterrupted pregnancy. He applied this treatment in 324 cases of abortion with a mortality under 1 per cent. and in 120 cases in which he induced abortion by puncturing the ovum, with no death.

70: 1265-1286 (Oct. 12) 1923

*Treatment of Tuberculous Empyema. R. Stahl and K. Bahn.—p. 1265.
*Morphinism. O. Wuth.—p. 1266.
*Humoral Transmission of Nervous Impulses. L. Duschl.—p. 1268.
Intracutaneous Treatment. F. Hoff.—p. 1268.
Findings with Blister Test in Nephritis. Gänsslen.—p. 1271.
Interferometry of Cerebrospinal Fluid. P. Matzdorff.—p. 1273.
Colorless Tar. K. Herxheimer.—p. 1275.
Pumping of Cerebrospinal Fluid. H. Strecker.—p. 1275.
Surgical Treatment of Puerperal Fever. E. Varela.—p. 1275.
Colloidal Mercury in Syphilis. S. Rothman.—p. 1276.
Double Syringe for Injections. K. Philipsen.—p. 1277.
Treatment of Nephrosis in Children. Klotz.—p. 1278.

Conservative Treatment of Tuberculous Empyema.—Stahl and Bahn report the histories of two cases of empyema (one in a pneumothorax) in tuberculous patients. They irrigated the pleural cavity through a middle sized cannula with a 2 per cent. solution of boric acid, and injected subsequently 30-200 c.c. of an iodin solution. Both patients recovered. The treatment has to be repeated sometimes once or twice.

Morphinism.—Wuth points to the resemblance between the symptoms of morphinism and of hypofunction of the thyroid; also to the resemblance between the violent disturbances from sudden abstention and the symptoms from hyperthyroidism. Generally speaking, the parasympathetic tonus seems to be increased during addiction and the sympathetic in abstention. He reviews the experiments of other authors which speak for the supposition that morphin acts on the thyroid gland—perhaps through the central nervous system.

The Humoral Transmission of Nervous Impulses.—Duschl experimented on rats in parabiosis, and injected blood from the heart of cats and rabbits into other individuals. He confirms Loewi's discovery of the slowing down of the pulse rate after injections of blood from an animal whose vagus had been stimulated.

70: 1287-1310 (Oct. 19) 1923

*Compression of Carotid Artery. H. E. Hering.—p. 1287.
Insulin. M. Rosenberg.—p. 1290.
The Arndt-Schulz Law. H. Handovsky.—p. 1294.
Collargol Reaction in Cerebrospinal Fluid. Krüskemper.—p. 1295.
Treatment of Pyelitis. H. Hohlweg.—p. 1297.
*Action of Rays in Cancer of Uterus. E. Opitz.—p. 1299.
"Porphyrinuria." O. Schumm.—p. 1300.
The Anamnesis in Gastro-Intestinal Disease. F. Crämer.—p. 1300.

Compression of Carotid Artery.—In experiments on dogs and rabbits, Hering failed to produce any retardation of the heart by compressing the exposed pneumogastric nerve between the fingers. He believes, therefore, that the bradycardia induced by compressing the region of the carotid is due to reflex action, and not to direct irritation of the nerve. Consequently he substitutes the term "compression of the carotid" for the term "compression of the vagus" which has been used since the discovery of the phenomenon by Czermak in 1866. The point of the bifurcation of the carotid is the most sensitive. The phenomenon is especially marked if the artery is sclerotic.

Causes of Favorable Action of Rays in Cancer of Uterus.—Opitz is much more optimistic in regard to the results of roentgen treatment of uterine cancers than Sippel and Jaeckel in their report reviewed here recently, on page 1993. He attributes their failures to the use of too high doses of irradiation. He always introduces an iontoquantimeter into the vagina, and applies a second one on the skin. The reaction of the organism and not the roentgen-ray sensitivity of the cancer is the important factor.

Zeitschrift für Tuberkulose, Leipzig

38: 401-466 (Sept.) 1923

*Serology in Pulmonary Tuberculosis. G. Katz and L. Rabinowitsch-Kempner.—p. 401.
*Sedimentation Test in Pneumothorax. M. Schneider.—p. 420.
*Wassermann's Tuberculosis Reaction. T. Janssen.—p. 423.
Sedimentation Test in Prognosis. S. Müller.—p. 425.
Colloid Instability and Lipases of Serum in Tuberculosis. W. Kremer.—p. 428.
Tubercle Bacilli in Stools and Urine. E. Falci.—p. 432.

Serology in Pulmonary Tuberculosis.—Katz and Rabinowitsch-Kempner have followed biologically for a year and a half the development of pulmonary tuberculosis in 174 patients. They applied repeatedly and regularly Pirquet's skin reaction (if negative, Mantoux' intradermal test was performed), complement fixation with Besredka's antigen, and the sedimentation test. The results were interesting, but not constant. They emphasize the necessity for repeating the tests at long intervals in the same individual.

Sedimentation Test in Pneumothorax.—Schneider finds a fair parallelism between the clinical condition and the sedimentation test in patients with artificial pneumothorax. She warns against discontinuing the treatment before normal figures are obtained.

Wassermann's Tuberculosis Reaction.—Janssen reports the clinical findings in seventy-three patients with pulmonary tuberculosis to whom Wassermann had applied his new serologic test. Of six patients giving false negative reactions, only one was in a sufficiently severe condition to account for it. There were, however, no false positive results. Generally, the weaker the reaction, the better the prognosis.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

2: 225-324 (July 21) 1923

*The Bacteriophage Not a Ferment. P. C. Flu.—p. 226.
The Full Bladder at Delivery. F. C. van Tongeren.—p. 239.
Milk in Treatment of Disease. G. F. Gezelle Meerburg.—p. 247.
*Cancer Mortality at Amsterdam. H. T. Deelman.—p. 250.
Acute Endocarditis; Recovery Under Silver Salt. L. B. de Monchy.—p. 255.

The Bacteriophage Not a Ferment.—Flu was able to infect strains of bacilli with the bacteriophage and to free them from it again. It is thus evident that bacterium and bacteriophage are two separate independent things. D'Herelle's contention is thus confirmed by his research, which included more than 400 passages of one bacteriophage strain from agar to agar during four years. This is difficult to reconcile with a ferment nature of the bacteriophage, while it might be explained by accepting d'Herelle's conception of the bacteriophage as a living parasite of certain bacteria. Its power of propagating and of adapting itself to changing conditions, as demonstrated in Flu's long and extensive research, has convinced him of the animate nature of the bacteriophage.

Cancer at Amsterdam.—Deelman compares the cancer mortality since 1910 in men and women, classified by organs. The last two five year periods show an increase of 9 per cent. for men and of 7.5 for women. There have been 167 cases of cancer of the larynx in men but only thirteen in women since 1910, and 566 cases of esophageal cancer in men to 101 in women. The figures for gastric cancer are nearly even: 2,288 and 2,079.

Hospitalstidende, Copenhagen

66: 557-572 (Aug. 8) 1923

*Acute Suprarenal Insufficiency. N. J. Schierbeck.—p. 557.
*Vaccine Therapy of Chronic Osteomyelitis. T. Rovsing.—p. 863.

Acute Suprarenal Insufficiency.—Necropsy disclosed a tuberculous lesion in both suprarenals that explained the fatal suprarenal shock in the two cases Schierbeck reports. If the blood sugar and the blood pressure had been examined, and epinephrin given, the young man and young woman might have been tided past the danger point, temporarily at least. The diagnosis had been acute appendicitis or catarrhal enteritis, with delirium.

Vaccine Therapy in Osteomyelitis.—Rovsing does not think it advisable to add to the antibodies which the young and vigorous organism is producing during the acute phase of osteomyelitis. The acute process damages the tissues irreparably in a few hours, and vaccine therapy is impotent to prevent this. But when the process has passed into a chronic torpid phase, then vaccine therapy may usefully reenforce the antibodies. In twenty of his twenty-three cases of refractory recurring or persisting osteomyelitis, staphylococci were involved and typhoid or paratyphoid bacilli in the others. In all the cases the vaccine induced an amazing change for the better at once, and the disease, often of ten to twenty years' standing, healed promptly and completely. The great mission of vaccine therapy in this field of osteomyelitis has been confirmed in the last seven years. Sequestra, of course, must be removed, and the vaccine must be strictly autogenous unless, as in a case described, the osteomyelitic focus has healed and the treatment is to relieve complicating neuralgia and swellings. In this case he used a vaccine from another case. In osteomyelitis, as also in urinary processes, the cases that respond most favorably to the vaccine therapy are the ones long most rebellious to all other measures.

Hygiea, Stockholm

85: 753-800 (Sept. 30) 1923

*Mental Hygiene for School Children. B. Gadelius.—p. 756.

Mental and Moral Development of Children of School Age, and Its Hygiene.—This is the annual Lennander lecture. In conclusion, Gadelius denounced the system of examinations for school children, and emphasized the importance of a sympathetic understanding between teacher and pupils. "Instead of classing the children by severe examinations, it is the teachers that need examinations in their psychologic fitness and training for their important task."

Norsk Magazin for Lægevidenskaben, Christiania

84: 849-928 (Oct.) 1923

*Suprarenal Virilism. O. Berner.—p. 849.
Case of Fibromatosis of the Feet. P. Bull.—p. 865.
Rheumatic Purpura. R. Hatlehol and F. Harbitz.—p. 870.
*Tetany and Diabetes. K. Motzfeldt.—p. 879.
*Urinary Disturbances in Elderly Men. E. Platou.—p. 883.

Suprarenal Virilism.—Berner gives a detailed study of a hen with a rooster aspect. A large epithelial tumor was found growing from one suprarenal.

Tetany and Diabetes.—Motzfeldt relates that a man, aged 37, developed gastric tetany in the course of pyloric stenosis and diabetes mellitus. During the tetany, the urine gave a positive ferric chlorid reaction, which conflicts with the generally accepted theory of alkalosis in tetany.

Hypertrophied Prostate.—Platou has traced to date nearly all of his 198 cases of hypertrophied prostate. In 22 per cent. there was cancer of the prostate, and 13 per cent. of the total 198 cases died in the hospital, with or without an operation. Of the 152 cases of simple adenoma, 65.1 per cent. were apparently cured by the operation, but only 8 of the 46 cancer cases; 3 of these are still living three years later, free from recurrence, and 2, five years later, of the 14 supposed inoperable cancer cases.